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BALTIMORE, JANUARY 31, 1901.

The Manufacturers' Record, the greatest industrial publication in the United States, and of the South, Southern—Jackson (Miss.) Correspondent of the New Orleans Picayune.

In a letter to the Manufacturers' Record the S. E. Hendricks Co. of 61 Beekman street, New York, publisher of Hendricks' Architectural, Engineering and Mechanical Directory of the United States, writes:

We receive your paper regularly, and frequently give copies to persons who visit our office, and have very often recommended it to people who have made inquiries of us regarding the merits of the Manufacturers' Record as an advertising medium. It was only one day last week that we were asked the very question, "What do you think of the Manufacturers' Record as an advertising medium for Southern trade?" and we answered, "By far it is the best published."

Of eighty graduates of the college of technology of Tulane University, twenty-eight are electrical engineers, thirteen are mechanical engineers, eleven are civil engineers, five are sugar engineers, four are industrial chemists, four are architects, one is a mining engineer and one is a geologist. Fifty-five of the engineers are at work in New Orleans, and the operative heads of the extensive drainage work now being done there are graduates of Tulane. These facts illustrate the value of technical training to the South. To find so many graduates of one institution doing well and gaining remunerative work in the community where they have been given their training is intensely gratifying. It shows that the demand for the technically trained is increasing, and that it is possible for Southern institutions to give the training needed.

The address made by Mr. Hoke Smith of Atlanta at the annual banquet of the Chicago Real Estate Board has been published in attractive pamphlet form. Mr. Smith dealt with the commercial future of the South, and by an array of convincing statistics showed the rich promise in that direction in the contributions of the country's exports of Southern cotton, both raw and manufactured, Southern iron and other products. He said that every condition favorable to commercial development surrounds the South; that its transportation facilities are excellent; that shipping from Southern ports is increasing and will increase beyond present calculations with the construction of an isthmian canal, and that the South, with its

agricultural, manufacturing and mining opportunities, is entitled to a place equal to that occupied by the Eastern and Middle States, and within a few years will occupy it.

Vigorous Denunciation of Cotton-Handling Methods.

New Orleans is grappling with the problem how to reform the cotton-handling business of that port. According to the Daily Item, an important conference, attended by the grievance committee of the exchange, officials of railway, steamship and insurance companies, boss draymen and others interested in cotton handling, was held at the Cotton Exchange January 16. While declaring that "New Orleans is practically handling its cotton business as it was handled more than a quarter of a century ago," the Item wishes it clearly understood that no grievance lies against the port of New Orleans that is not equally chargeable against "Savannah, Brunswick, Galveston, Mobile and all other Gulf or Atlantic ports."

The handlers of cotton tried to put the blame on the railroads. The latter rejoined that they did all that could reasonably be expected of them, seeing that the cotton handlers persisted in making warehouses out of their rolling stock and yards. Representatives of insurance companies, while prudently refraining from the attempt to fix the responsibility, vigorously protested against the wretched conditions. The Item, commenting on this contention of the railroads, says that the scene in a local freight-yard during the cotton season "beggars description."

Capt. A. K. Miller, dean of the New Orleans ship agents, declared that "cotton is never treated decently and never receives the attention due it until it is stowed aboard ship." He was willing to wager that a visit to the public wharves would show that not a bale of cotton was "sheeted" or protected as it ought to be. "Or," said the captain, "we can go to any railroad yard you like and I'll make the same bet that two-thirds of the cotton on hand is in the same fix. I am not blaming the railroad people, understand me, for they are barbarously treated in many instances by the owners of the cotton, and their property is made to do warehouse duty without consideration; but I'm telling you some facts about the methods of this port. The truth is, we are now trying to handle the traffic of the twentieth century with the facilities that may have been all right twenty-five years ago."

Driving at the very root of the evil, Captain Miller inquires:

Why should American cotton be gotten up as it is? As a shipmaster of years of experience, I have handled cotton from Egypt, Sumatra, Bombay and other foreign ports, and none of the conditions were found that exist with this country's staple. Foreign bales of cotton are of uniform size, and the staple is put up practically as if it was the finest of silks and satins. The bales are carefully fitted, and not as much as a pinch of cotton can be plucked out.

Our cotton comes in all sizes and in all conditions of dilapidation. It frequently comes to the ship side in the filthiest condition, after having been dumped in mud an inch deep, wet and soggy. No wonder the insurance people kick; no wonder the spinner kicks; no wonder the railroad people kick.

Badly-baled cotton is an ever-present menace to safety. I have seen with my own eyes, in a fire aboard a cotton-laden ship, the flames jump over the properly-baled cotton and attack the next package that had portions of the contents exposed.

I want to go on record as protesting against the entire system, not against the railroad or the insurance men or the cotton handlers, for they and we ship agents do all we know how to keep things moving pleasantly, but something has to be done, or, as the boys say, "something will drop."

It is indeed time that "something should drop." The cotton-growers of the South are heartily tired of being made the cat's-paws for the selfish interest of others who are seeking to perpetuate this criminally wasteful system in order that they may continue to collect fat fees. The favor with which farmers and underwriters everywhere welcome the round bale shows that they are no longer deceived by the bogies invented by the compress combine and bagging and tie trust. The round bale seems to solve the cotton-shipping problems. Not only does it save the farmer considerably more than the baling charge, but it conveys his cotton to the mill in as good condition as when it came from the gins, without loss or damage of any kind, and cures all the evils so forcibly depicted by Captain Miller.

Scholars in Industry.

Dr. Henry S. Hartzog, the president of Clemson College, South Carolina, who is such an efficient leader in building up, through the practical results reached by that institution, a sentiment favoring greater interest in industrial training in the South, contributes to this week's Manufacturers' Record an article full of suggestions for all workers for the South. While in some quarters there is a demand for the scholar in politics, Dr. Hartzog asserts that the greatest need in the South today is the scholar in practical life, and that to achieve industrial success a country must have natural resources and skilled labor to develop them.

The South has the first. Its pre-eminence in that respect is beyond dispute. But, as Dr. Hartzog points out, the South has not the wealth that it ought to have, because it has been largely giving its attention to the selling of raw products, and has thus been living, as it were, by its brawn instead of its brains. A change is taking place in this respect. But yet the supply of skilled labor is by no means adequate to the necessities of the case. To supply it technical training is needed, if for no other reason, certainly as a powerful means of producing that wealth which insures more liberal support of colleges. Such training, too, in strengthening the faculties of perception, reason and observation, is a distinct culture value of itself, and there is no reason, says Dr.

Hartzog, why culture and utilitarian ends should be separated in any plan of education.

There is no doubt that the South has been too strongly inclined to regard a scholar as a man trained in the humanities. The reinvigoration coming to the South has created a call for the mind trained to creative purposes. Properly aided, this training is bound to place the South upon a plane where not only the technological institutions will be equipped according to the needs of the day, but also schools educating for professions will be in far better condition than they are at present. There is no need for genius to starve in a garret to accomplish its aim in life. Provision for proper training of the small army of Southerners who are to lead in agricultural and manufacturing enterprises will insure a stronger, broader and deeper basis for the support of those energies which make wealth worth possessing.

Germany Threatens Itself.

Through a statement in the Prussian Diet made by Count von Bulow, the imperial chancellor, it is apparent that the German powers that be are preparing to meet the agrarian movement in the empire. He announced that the government had resolved to increase the tariff applying to corn and other agricultural products, with a view to improving the depressed condition of German agriculture. Close observers see in this movement a threat against the agricultural exports of the United States. But at the same time they are convinced that any stringent regulation on the part of Germany in this direction will hasten the decline of Germany's export trade in manufactures. High-priced food for German artisans and mechanics means a reduction of German effectiveness as a manufacturer. As between the United States and Germany, trade is a case of give and take, in which the former occupies the more independent position.

The Charleston Exposition.

Without a dissenting vote the city council of Charleston, S. C., adopted last week an ordinance providing for a special tax and appropriating the proceeds of the tax for the erection of the cotton palace at the Charleston Exposition, and for other purposes connected with that great undertaking. This action by the council did much to hasten similar action by the South Carolina legislature in the passage of a bill making an appropriation of \$50,000 for the exposition, and such action will do much to hasten the passage of a bill in Congress making a national appropriation. The bill has already passed the national Senate, and is before the House of Representatives. But four weeks remain of the present Congress. If the bill has not become a law within that time it will fail of its purpose, as the exposition is to open before the assembling of the next Congress. The people of the United States

have a personal interest in the success of this exposition, which proposes to bring into closer touch than ever the industrial and agricultural interests of the United States, the West Indian Islands and other lands. Promptness on the part of the South Carolina legislature in meeting its demands will have undoubted effect for good upon the national legislature.

Hunting the Octopus.

The octopus has reared its horrid hydra front again in Arkansas. With full recognition of his experiences as attorney-general with the terrible creature, the Hon. Jeff Davis, upon taking his seat as governor, gave vent to a suggestion that another attempt be made to throttle the monster which is threatening "the very basic principles of government," and in the senate a bill has been introduced to meet the governor's demand. In line with the spirit other bills have been introduced regulating the handling of freight by the railroads. It is a pity that the great industrial opportunities of Arkansas should be menaced by such a spirit. It is a State that ought to be one of the greatest in the country. It has quite a number of progressive citizens anxious for the development of its natural resources, but they do not seem to have been able to impress their wishes upon their statesmen. If Arkansas can stand it the rest of the country can. In passing, though, it might not be amiss to express regret.

Perhaps the octopus hunt is, after all, to be of the anise-seed order, like that which seems to have been started in the West Virginia legislature. There a bill has been introduced modeled after the Texas law, but, according to a dispatch from Charleston, its author announces that he does not intend to push the measure, and only smiles when it is suggested that he may have done so to please his constituents. There are various reasons why bills of this character are introduced beside the purpose to legislate a mistaken notion into the statute-books.

Cotton.

It is announced that Mr. James M. Smith of Oglethorpe county, Georgia, has sold at Augusta 2000 bales of his cotton for \$100,000. On the eve of the planting season such an announcement is likely to give an impetus to the movement toward enlarged planting, indications of which have been noted here and there in the South. It is one of the biggest crops of cotton ever sold by a farmer. The men, however, who are preparing to pitch increased crops under the spur of the gratifying prices brought by cotton this year must not lose sight of the fact that Mr. Smith received this handsome price because he was able to hold his cotton for it. He was able to hold it because he is accustomed to raising his own supplies, filling his barns from his own fields and his smokehouse from his own hog-pens. Such a farmer is the only one really independent of the market, and the only one who can afford to venture upon increased acreage when cotton has been ruling high. He can only afford to do so if he has determined to persist in his policy of raising necessities on the farm. Cotton farmers have during the past few months come into the daylight. They have had a hard struggle, but prices ranging from eight to ten cents a pound have been a great relief for them. Many of them have gone ahead of expenses for the first time in many years. Any theory that will lead such to put all their sur-

plus into enlarged acreage, and perhaps to incur new debts in the expectation of getting similar prices for the new crop, is likely to set them back again. They have now a splendid opportunity to put into effect the rule of more cotton to the acre instead of more acres for cotton.

Latin-American Trade.

While the gaze of commercial America is fixed upon the distant East or is ranging toward South Africa and Australasia, it may be well not to lose sight of trade opportunities closer at hand in Latin America. There is a vast field in that direction hardly explored by Americans, though its advantages have been set forth again and again, and even not fully exploited by Great Britain and Germany, which seem strongly entrenched there. Bearing upon this subject the South American Journal, published in London, expresses dissatisfaction even with Great Britain's position in South Africa, and says:

In view of the fact that the English race has at all times been the greatest travelers of modern peoples, and that British commerce has penetrated into every corner of the world, it is remarkable to observe what an absence of knowledge generally prevails, even amongst business classes, with regard to the actual condition and prospects of the various countries of South and Central America. That this is the case, however, must be acknowledged by all who are connected with these countries.

This is still more inexplicable having regard to the circumstance that already an enormous amount of British capital, estimated at about \$500,000,000, has been invested in loans, banks, railways and numerous other undertakings and public works, and that we have always held and still retain the premier position in their markets, supplying their wants and purchasing their products to a greater extent than any other nation. It might have been supposed, therefore, that having such important interests at stake, the British people would have made themselves more thoroughly acquainted with the resources and affairs of each country, and have followed the development of them all with constant watchfulness. Much of the indifference concerning and prejudice against those countries has probably arisen owing to the general press rarely mentioning them except in relation to some disturbance of the peace or some other calamity, almost wholly ignoring their progress during periods of tranquillity and prosperity. Hence erroneous and exaggerated notions have been formed by the public, and a very general idea subsists that they are "constantly in a state of revolution." It may be explained that Latin America, including Mexico, which is in the Northern Continent, is composed of no fewer than eighteen independent republics, which differ greatly in their conditions of advancement and civilization, so that general conclusions with respect to their affairs must be in most cases misleading and fallacious. It is true that the progress of those countries has fortunately been seriously retarded by the errors of the men who have controlled their destinies since they achieved their independence; but against this it should be taken into account that their development has been, nevertheless, more rapid and more substantial than had they remained under the domination of the old Spanish colonial regime.

From one standpoint, perhaps, this retardation is not to be regretted, since it has left open to the enterprising men of the present day a field so much the more extensive for the employment of their energies. Everyone can realize that when countries become well known and attract special attention competition in their markets soon becomes so keen that prices are cut down to the lowest margin of profit, and very little chance is left for people of small capital. It is the clever business man who keeps a lookout for markets not yet competitively exploited, where the higher profits he can secure will more than compensate for any additional trouble or risk he may have to incur. In this sense, nowhere in the world can such favorable conditions be found than in the various countries of South and Central America.

To begin with, they surpass all others in undeveloped natural resources. South Africa, to which so much attention is now being given, does not approach them in this respect. When all the mineral treasures of the Andes and of the great central tableland of Brazil have been made known people will

wonder that so much wealth had been so long neglected in favor of other fields not nearly approaching them in value. The tropical regions of South America abound in vegetable products, which, though already largely worked, produce almost nothing compared to what they might be made to yield. The same may be said with regard to the production of the agricultural and pastoral regions. For engineers and constructors of public works no part of the world offers greater scope than do those countries whose development may be said to have as yet hardly begun, and where all classes of industrial machinery is required upon an ever-increasing scale, whilst, at least for many years to come, it is not probable that machines can be manufactured there to compete with the makers in older countries. An enormous extension of the railway systems has still to be made, and many harbor improvements will become urgently necessary as commerce increases. In electrical undertakings, above all, there must soon be a wonderful expansion. Though the commercial importance of Latin America is not sufficiently appreciated by the British, this is by no means the case with our rival nations, especially the Germans and the Americans, who have been making strenuous efforts to oust us from the position of commercial supremacy which we have held for so many years. In this they have succeeded to a large extent, and probably will continue to improve their position unless counteracting steps are taken by us. The ultimate reward will probably fall to those who work with most intelligence and energy. If our competitors win they will merit their success; if the English lose they will have no one to blame but themselves.

The Journal gives a number of figures bearing upon territory and population, and adds:

These will suffice to show what enormous scope there is for development, especially when it is known that there is proportionately much less "steppe" and desert in South America than in any of the other great continents; that its cultivable soil is unsurpassed in richness; that its river communications with the interior are unrivaled, and that even its desert regions yield enormous wealth in minerals and nitrate of soda.

Canada has been casting about for means to reach the South African fields, but the Canadian Manufacturer of Toronto, in reproducing the article from the South American Journal, says that no other doors are more invitingly wide open for Canadian manufacturing and commercial enterprise than those of Mexico and the Central and South American countries. If Canada can show such interest in the Latin Americas surely the United States ought not to lag in interest of that sort, and the manufacturers of cotton and other goods for export in the South ought really to be leaders in exploiting that field thoroughly. Several of the Gulf ports are strengthening their connections in that direction. Their efforts should be reinforced by the whole commercial and industrial South.

The address by Hon. William A. MacCorkle, late governor of West Virginia, before the Nineteenth Century Club of New York on universal suffrage has been issued in attractive pamphlet form by the Robert Clarke Company of Cincinnati. The suffrage is a subject which is attracting more attention today than perhaps at any other period of our history. Ex-Governor MacCorkle takes a broad view of it, and his address is illuminating and suggestive for students of the problem.

The Southern Farm Magazine.

In a recent competition opened by the Southern Farm Magazine one of the papers securing a \$50 prize was by Prof. J. F. Duggar of Auburn, Ala. He discussed the opportunities for young men in Southern agriculture, with special reference to its methods, its difficulties and the means of overcoming them in the future. In the February number of the Southern Farm Magazine this paper is

published as the leading article. Professor Duggar points out in it that the obvious hindrances in Southern agriculture are too exclusive reliance on one crop, neglect to maintain fertility of the soil and insufficient information regarding scientific principles of agriculture. He shows, by quoting examples, what may be done in view of the many natural advantages of the South, and dwells at length upon intelligent application as the hope of young Southern farmers. The article, framed in simple, attractive style, will be found to be an inspiring one.

Other suggestive papers are by Prof. B. Irby of the North Carolina College of Agriculture and Mechanic Arts, who sets forth a plan for co-operation of cotton farmers in the manufacture and sale of the raw material and its products; by Mr. M. V. Richards, land and industrial agent of the Southern Railway, on the promise in the South for thrifty immigrants and the potentialities there for development in that direction during the next few years; by Col. Robert Gates, on the interrelation of farmers, factories and railroads; by Mr. John A. Davis, on the mutual interests of cotton-growers and bankers; by Prof. Andrew M. Soule of the University of Tennessee, on the best methods of conserving soil moisture, and, akin to that, by Prof. W. S. Massey, on preparing land for trucking.

"Snap Shots" is the title of a summary of current events by Peter Pechin in the department devoted to writers and other things, and snap may be said to be a characteristic of his comments upon hazing at West Point, the publication of love-letters, literary life at Washington and other subjects now before the public. In the Family Circle, under "The Hints for the Housekeeper," by Virginia, are timely suggestions for the month, in addition to a number of attractive recipes, and a humorous department is largely devoted to a hit-off of Harmsworth in American journalism. Editorially are discussed the advantages of rural free delivery, of shade trees in towns, of co-operation of farmers and railroads, of bonds for public education, and of training in poultry-raising. The record of development in Southern agriculture and immigration is also fully covered.

Manufacturers' Record Asks "Why?"

[The Mobile Register.]

Writing of the proposed incorporation of the Southern Industrial Association, which had a convention recently in New Orleans, and of the announcement that "at the urgent request of prominent citizens in several Southern cities the fixing of permanent headquarters has been postponed thirty days to allow any city that desires to do so to compete for the same," the Baltimore Manufacturers' Record asks:

"What Southern cities are urging the postponement of this great decision as to the association's final resting-place?"

"Who is to have the decision as to the officers of the company, and as to the disbursements of the money which so many Southern cities are seeking to contribute by means of annual memberships?"

And follows with this comment:

"Such organizations as the Southern Cotton Spinners' Association or the lumbermen's associations, composed of people directly identified with the interests represented, have every reason for their existence. Even an occasional industrial or immigration convention may be of much value, but a perpetual organization of the kind proposed, it seems to the Manufacturers' Record, is absolutely without the elements essential to success. The South has wasted so much time and money on 'rainbow' projects of this kind that, with

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all due deference to the good men identified with this enterprise, the Manufacturers' Record is constrained to suggest that it be abandoned, or else that the visionary scheme of trying to work up a rivalry between different cities as to its location be promptly given up. It smacks too much of the old boom days, when broken-down enterprises sought to induce Southern towns to bid against each other, to the great misfortune of the one that finally captured the supposed prize. All of us ought to have learned something by that experience."

The Register has suspicion that there will be no organization. The plan was passed upon in New Orleans by a very small number of the delegates in attendance, and with little interest shown by the majority of delegates present at the session when the matter was discussed. On later enquiry we found that there was prevalent among the delegates the opinion that they had contributed from their own pockets, in the shape of payment for traveling and personal expenses, their full share to the support of the organization, and that they were not inclined to pay anything additional in the shape of membership fee. Presuming that those who had taken the trouble and met the expense of attending the convention were, of all, the most likely to desire to maintain the organization, and observing that they were not inclined to apply for and pay for membership in the organization, we reached the conclusion then that there would be no organization effected. Since that time a number of circulars have been issued by the secretary and invitations extended to commercial organizations, railroad organizations, city governments and private persons to join the organization and contribute to its support. We have no means of knowing what response has been made to this appeal, but we have our idea on the subject.

Now comes the alleged "urgent request" and so-called "competition" in various cities for the location of the permanent headquarters of the organization. We take the liberty of doubting the existence of the competition, or, if there is any competition, it arises from lack of information on the part of the cities of the composition of the organization itself. At present the organization consists of a number of officers, the chief of whom are the president and the secretary, and, as far as we are able to discover, of very few, if any, members. The competition, however, may be as fictitious as is the organization itself.

The Manufacturers' Record is correct in its criticism of the plan. There is really no need of a permanent organization, even if means for its support could be found. The industrial convention served its purpose. If another is required it can be called as the one in New Orleans was called, without the preliminary bother of keeping up an organization, payment of dues, and so on.

For All Best in the South.

[Cotton Ginners' Journal.]

A splendid closing-of-the-century number was that (December 29) of the Manufacturers' Record, Baltimore. It contained a number of timely papers written by practical, thoughtful men of all sections and representing many important industries and interests, depicting the achievements of the past century and the possibilities of that now upon us. And as it always does, it gave the South the place of honor, as a land of promise, a section where progress and prosperity will be pre-eminent. We cannot too cordially commend the spirit of the Manufacturers' Record in this respect. It stands steadily, intelligently and fearlessly for all that is good, all that is best for the South.

Twentieth-Century Education for the Twentieth Century.

By Henry S. Hartzog, LL.D., President of Clemson College, South Carolina.

The South is synonymous with opportunity. It is a theater of golden hopes for ambitious men. The prizes held out to energy and genius are larger and more varied in character and more readily seized than in any other part of the globe. But we should not blind ourselves to the fact that in most matters of industrial progress we are not keeping abreast of the spirit of the age.

Our system of education is responsible in part for this condition of affairs.

The popular idea of the scholar makes him a pale recluse who spends his time in the contemplation of timid generalities. He studies mind as divorced from man; essence as divorced from entities; beatitudes as divorced from bodies. The scholar is believed to sit on the arid mountain-top of scholasticism, reading the starry leaves of heaven, feasting on the sunsets, his soul mellowed and glorified by high thinking and plain living, but without sympathy for the intensely sordid, practical, struggling humanity down in the fogs of the valley.

When he condescends to mingle with the people for a season he is treated as the world treats woman, for the world believes not so much in woman's rights as in the right woman.

The greatest need of the South today is the scholar in practical life. We need more twentieth-century education for the twentieth century.

Two Factors of Industrial Success.

To achieve industrial success two factors are necessary:

1. The country must have natural resources.
2. There must be skilled labor to develop the natural resources.

A statistical array of the resources of the South reads like a chapter from the Arabian Nights. There are Klondykes of wealth in its mountainous regions, millions of acres of virgin timber on its plains, inexhaustible coal beds and iron beds in close proximity; in short, no other portion of the United States has anything like the natural wealth of the Southern States.

Why We Are Poor.

Why have other less-favored sections surpassed us in the race for industrial supremacy? It is because we have devoted ourselves exclusively to making and selling raw products. Such work does not demand skilled labor or technical training. We have been living by our muscles, and not by our brains.

Permit me to illustrate: The students of the textile department in Clemson College are learning how to make fancy weaves.

South Carolina produces annually 800,000 bales of cotton, which, at seven cents a pound, is worth \$28,000,000.

That crop of cotton made into fancy twills would bring \$800,000,000.

Or made into mercerized cotton figures would bring \$700,000,000.

Or made into imitation swivel silks would bring \$800,000,000.

Now, why not manufacture our staple crop into finished goods. The raw products are close to the mills; we have a conservative laboring element; the climatic conditions are unexcelled; we have an abundance of water-power, and the people of the South have an inherited genius for managing large enterprises.

Technical Training Needed.

One thing is lacking. We need more education along industrial and technological lines. The main object of such training is to apply science to the material

interests of man. The object is to combine knowing and doing—to teach common sense in a systematic manner. It would not have us take less interest in the past, but more in the living, throbbing present. It would not have us know less about the aqueducts of Rome, but more about the water supply of New York.

Education in Industrial Development.

The census of 1890 shows that where the public-school term is longest the average productive capacity of the citizen is greatest. In the United States the average school period per inhabitant in 1897 was four and three-tenths years; the average school period for Massachusetts is seven years. The productive capacity of each citizen of Massachusetts as compared with that of each individual in the United States is as 66 to 37.

If this be true for common-school education, how much more strikingly must it be true for technical education, that fits a man especially for productive industry.

In 1882 England woke up to find that Germany was competing with increasing success for the foreign trade of the world. A commission was appointed to ascertain the cause. This commission, after a careful investigation, reported that Germany's industrial growth was owing to her splendid system of technological schools. Since then England has expended enormous sums of money in preparing her sons to compete with the skill of other lands.

In South Carolina it was known for years that immense beds of calcareous nodules containing numerous fossil bones existed in the vicinity of Charleston. In 1867 Dr. Pratt discovered the large percentage of available phosphate of lime which these rocks contained. A company, consisting of Dr. Pratt, W. C. Bee, Robert Adger and C. G. Memminger, was chartered to do business. From this little enterprise has grown the great phosphate business of Carolina, employing in the aggregate millions of dollars.

For 200 years these rocks were looked upon as useless excrescences of nature, but the application of science opened up avenues of opportunity that led to fortunes.

Bread and Butter Training.

I would not have you think that I am applying the "full-dinner-pail" argument for more technical education. I do not believe that the ability to make money is a true test of the value of an education. I am pleading, however, for an education that will fit a man for the duties and responsibilities of citizenship. The logic of circumstances compels the graduate in practical life to divide his time between biscuits and books. It is between the Scylla of biscuits and the Charybdis of books that the practical man must sail.

It is easy enough to sneer at a so-called bread-and-butter education, but I submit that bread and butter are excellent articles to have in abundance. When our country wakes up without a breakfast in sight I fear that even the persuasive accents of Demosthenes and Cicero, in the most finished Greek and Latin orations, could not give comfort to the multitude.

Technical education helps to produce wealth, which ensures endowments for colleges. Colleges are not self-sustaining. They must depend for their existence and growth upon government aid or private beneficence. A calculation made from the catalogues of twelve leading universities shows that the average cost of maintaining a student over and above the fees he pays is \$245 per annum. Very few col-

leges in the Southern States have attained a genuine leadership in American education, for the reason that the South is comparatively poor, and has not been able to furnish the money to meet the requirements of a great modern university.

Industrial education, therefore, that promises to enrich the South will be watched with the most affectionate interest by all interested in higher education.

Culture in Technical Education.

Technical education has a culture value not inferior to that of other lines of education. It trains, strengthens and energizes the faculties of perception, reason and observation. The system is subjective and objective.

To adopt an illustration from Garfield: A man may read you in Xenophon's best Attic Greek that Apollo flayed the unhappy Marsyas and hanged up his skin as a trophy, but he has never examined the wonderful structure of his own skin. Men are looking so steadily away from themselves that they do not observe the wonderful things around. Copernicus discovered the circulation of the stars a hundred years before Harvey discovered the circulation of the blood.

We study the story of the forges of Cyclops, where the mythical thunderbolts of Jove were fashioned. How many have read the life of Bessemer? A few years ago Bessemer, studying the nice affinities between carbon and the metals, discovered that a single change of combination would produce a metal possessing the ductility of iron and the compactness of steel. One rail of this metal will outlast fifteen rails of iron, and it costs but little more. That invention saves the country \$800,000,000 every year, and makes railway traveling much safer. Is there as much culture value in the story of Bessemer as in that of Cyclops?

Culture is an incident of orderly thinking. Culture results not so much from the subject handled as from the method. Consecutive and systematic thinking along any line will produce culture. There is no reason why culture and utilitarian ends should be separated in any scheme of education. A subject should not be barred out of the curriculum because it has an economic bearing.

A Danger of Technical Training.

There is one danger in technical training that should be very carefully guarded against. There is the danger of accentuating specialization. An educated man "should know something of everything and everything of something." There should be a broad foundation of general knowledge, and upon that should be erected a superstructure of special knowledge. The educated man should take a telescopic view of all knowledge and a microscopic view of one subject.

Wants an Insect Destroyer.

Editor Manufacturers' Record:

We are troubled very much down here with roaches and weevils in corn, bran and the like. Can you suggest some exterminator? We have burned sulphur freely where the weevils are, but this does not seem to get rid of them. Roaches are also very bad, but they are not near as destructive as the weevils. We imagine there is some chemical that can be burned that will eradicate them, and we should greatly appreciate any information upon the subject.

S. L. DRANE.

Hull, Fla.

It is estimated that the cost of the dike to be constructed by the government from Texas City, Texas, to Pelican Island, will be \$2,000,000. It will be nearly eight miles long, and will be one of the features of the improvement of Galveston harbor.

PROMISING GOLD PROPERTIES IN NORTH CAROLINA.

By Joseph Hyde Pratt, Ph.D., Mineralogist and Mining Engineer.

In the South Mountain gold region, which has been known for nearly three-quarters of a century and has produced at least \$3,000,000 of gold, there has been discovered within the past two years gold-quartz veins which give promise of the most flattering results.

While most of the work up to the present time in this region has been confined to the placer deposits, attention is now being directed to these quartz veins, which are undoubtedly the origin of the gold in the placers. The district in which these veins have been found is in Burke county, from six to twelve miles north of Morganton. The first vein of any prominence, and which attracted attention to this section, was encountered while sinking a well. Pieces of the quartz that were thrown out were seen to carry free gold, and it was this that led to the development of this property and adjoining properties.

The first company organized to develop and work these properties was the South Mountain Mining Co., which was incorporated under the laws of the State of Virginia, with a capital of \$250,000. This company now owns or controls about 2000 acres, a portion of which is located six miles north of Morganton, and other tracts near Scott Hill, nine miles north of Morganton.

Most of the work that has been done by the company during the past year has been in the nature of development work, consisting of open cuts and shafts, which has been made at numerous points along the strike of four different veins that have been located on the property. From the four deepest shafts, which were twenty, twenty-five, sixty and seventy-five feet deep, respectively, ore was taken for assay. These assays gave values from \$13 to \$200 per ton, the smaller assays being from ores taken from or near the surface, while the larger are from ores taken from near the bottom of the shafts. A mill test that was made upon 1700 pounds of ore gave \$42.83 per ton, while another mill test of 600 pounds of ore gave \$104.50 per ton.

There are two types of gold deposits on the company's property—one in which gold occurs in quartz fissure veins, and the other in which the gold occurs in bands of the country rock either in the form of free gold or finely-divided sulphurets. The bands of country rock carrying gold are apt to be decomposed and stained by iron oxide, and are known locally as "brown ore," and this is at the present time the principal ore that is being mined.

From the results obtained by their development work, the value of this property has exceeded the expectations of the company, and preparations are now being made to mine this ore on a large scale, and to put up an extensive plant to treat the ore.

If these veins continue in depth and continue to carry the values already found this property should become one of the most profitable gold-mining properties in the State.

The Hercules mine, which is twelve miles north of Morganton and is owned by Mr. Robert P. Orr of Newport News, Va., is one that is giving probably the most favorable and promising results for the amount of work done of any mine in North Carolina. Mr. Orr has developed this property by sinking a shaft on a quartz vein which was eight inches wide at the top and which was found to widen to thirty inches at the bottom of the shaft at a depth of fifty feet. This has been

traced on the surface for nearly one-half a mile by means of open cuts and pits. At the 25-foot level in the shaft a drift of 100 feet was run on the vein, and it was found to be continuous throughout this distance. The ore that has thus far been taken out shows up remarkably well, and if the veins continue, as they appear to be doing, this will be one of the richest quartz mines known in North Carolina. While as yet no assay has been made of the ore from this vein, it is very high, as indicated by the specimens showing free gold that have been taken from the shafts and pits. Mr. Orr states that one ton of ore has been taken out, every piece of quartz of which shows considerable free gold in it. About twenty tons of ore have been taken out altogether. Some of the specimens shown by Mr. Orr were the prettiest pieces of quartz gold that the writer has ever seen from North Carolina.

While this is the only vein upon which there has been very much work done, it is probably but the beginning of what will be extensive mining in this district. Mr. Orr owns several other properties in this vicinity which he says carries quartz veins that give as good promise as the one he has already opened, and it is not at all improbable that as this section is more thoroughly prospected still other good veins will be discovered.

As was stated above, at least \$3,000,000 of gold has been taken from the placers in this South Mountain region, a great deal of which was coarse gold. Now that the richest of these placer deposits have been worked out, it is only natural that the sources of this gold should attract attention, and from the richness of the placers it is to be expected that there will be many quartz veins that will give very rich results.

FIVE LARGEST OIL TANKS.

They Will Be Built for the Great Texas Gusher.

Col. James M. Guffey has just contracted with the Ritter-Conley Manufacturing Co. for five of the largest oil-storage tanks ever constructed for his monster gusher in Southeastern Texas. The tanks will each have a capacity of 50,000 barrels of oil, will be made of Pittsburg steel and by Pittsburg workmen. Colonel Guffey has also purchased 110,000 feet, or almost twenty miles, of pipe from the National Tube Co. for the line he will construct to tidewater at Port Arthur. This line will be laid by expert oil men sent to Texas by Colonel Guffey. Over \$250,000 will be spent alone in the tanks, the pipe and the construction of the line. No arrangements have been made for the building of a refinery at Port Arthur. This project will be taken up later.

Each tank will be 130 feet in diameter and thirty-five feet high. The monsters will be erected on a 150-acre plot purchased by Colonel Guffey and his partner, John Galey, at Port Arthur, and in addition to them two or three tanks, with a capacity of 35,000 barrels each, will be built near the Lucas well. The Ritter-Conley Company is sending complete compressed-air riveting and caulking machines to Texas. All records will be broken in the construction of the tanks.—Pittsburg Dispatch.

The newly-elected officers of the Memphis Merchants' Exchange are R. L. McKellar, president; Nat S. Graves, secretary; Watkins Williams, assistant secretary; and Edwin R. Gardner, inspector, weigher and gauger.

HIGH POINT—FURNITURE.

Synonyms in a North Carolina Industrial Center.

North Carolina has more than seventy varieties of trees of first size and fifty-seven of great economic value. Fourteen of these reach heights of more than 100 feet, three of them heights of more than 140 feet, sixteen attain diameters of five feet and five diameters of seven feet or more. Its forests have for years, in supplying fuel, timber and turpentine and its products, been among the chief sources of the revenues of the State, amounting in value to probably \$30,000,000 annually. They have also supplied the material for the manufacture of vehicles, sashes and blinds, barrels and crates and other woodenware, and various kinds of furniture.

Within the past few years the making of furniture has given distinction among Southern towns to High Point. This place, in the southwestern corner of Guilford county, is on the main line of the Southern Railway, 302 miles from Washington and 300 miles from Atlanta. Twenty-eight years ago Captain W. H. Snow, a native of Vermont, who, at the close of the war, settled at Greensboro, began at High Point the manufacture of spokes, handles and shuttle-blocks. He was one of the first men to appreciate the economic value of North Carolina's native woods, and from the time of his coming to High Point until a few months ago, when he retired from active business, he successfully started and operated a number of woodworking establishments and brought the products to the attention of New England men. He is generally recognized as the one individual who has been largely responsible for the industrial spirit which has made High Point what it is today.

With a population of 4500 the town has thirty-three factories, or one factory for every 140 persons, and two national banks which have among their officers and stockholders men interested in the factories, and which have given liberal encouragement to the development of local industries. The great majority of these are woodworking, and most of them make furniture. The first furniture factory established at High Point was built by a company organized eleven years ago. In a short time it was found necessary to double the supply of the machinery, which is now operated by a 150-horse-power boiler and 125-horse-power engine. Other establishments on similar lines show like progress. One started in 1890 increased its capital within three years from \$15,000 to \$18,000, and within another short period made another increase to \$36,000. Another, starting in 1893 with \$15,000 capital, increased it to \$24,000 in 1897, and last year was compelled to add to the capacity of the plant by the erection of a new warehouse and finishing-room three stories high, a two-story cabinet-room and a commodious showroom. A fourth, four years old, doubled its capacity in 1900, added improved machinery, and now has a machinery-room 60x140 feet and two stories high, while the finishing-rooms and warehouse, three stories high, are 40x100 feet.

There are other furniture factories, a lumber plant and establishments where mantels and tables, chairs, showcases, trunks, spoke handles, shuttle-blocks and bobbins, lounges, coffins, mattresses and bed springs and excelsior are made, in addition to paint works, machine shops, a plug-tobacco factory, two roller mills and a shirt factory.

Quite typical of the flourishing community is the large number and comparative youth of many of the men who are leaders in industry and finance there. As

many of them, too, are natives of the town, and have had experience in shops or in the offices before becoming proprietors, young men growing up in the place have been impressed with the advantages opening before them in a manufacturing line. For example, Mr. J. Elwood Cox, who is at the head of a concern making spoke handles, shuttle-blocks and bobbins, which he purchased seventeen years ago from the veteran Captain Snow, is also president of one of the national banks of High Point, which fills the pay-rolls of more than twenty of the factories there and of several cotton mills in Randolph county. He is but forty-five years old. Mr. R. F. Dalton, the president of a lumber company with a capital of \$100,000, is but forty-four years old. Mr. John H. Tate, president of one of the furniture companies, is forty-three years old, and has been in the business but ten years, starting as superintendent of a factory. Mr. Chas. Ragan, the secretary of another company, who has been closely identified with it for several years, was born in 1871, and has had a technological training, both from the theoretical and applied standpoints. Mr. A. V. Sapp, secretary and treasurer of a company which makes tables, is also but thirty years old, and until eleven years ago was in mercantile life. Another illustration of a change from other careers to that of manufacturing industry is Prof. S. L. Davis, who is thirty-three years old. After graduating at a college in 1892 he entered upon the profession of teaching, but three or four years ago he began to learn the furniture business, and is now secretary and treasurer of a chair company. Still younger is Mr. Percy V. Kirkman, who is at the head of an upholstering business established by him in 1896 with two others, whose interest he purchased in 1890, just as he became of age. But twenty-three years old now, and eminently successful, he has a great future before him. O. Arthur Kirkman, who was born in 1875, and who ventured upon a new line of business when he was a boy, now owns a mattress and bed-spring factory, which recently was enlarged to meet improving business.

Typical of the youth of so many of the leaders in High Point, some of whom have interests in more than one concern, is the statement regarding the general manager of a fire insurance company in the town that "he has been in the insurance business since he was quite a young man." He is now at the advanced age of twenty-nine years. This youthfulness is one of the most striking features of the town. Its industrial life is also young, and is full of the vigorous enterprise and alertness naturally belonging to youth which give fair promise of a productive and substantial career upon lines which have made High Point the manufacturer of furniture and other household goods into which wood enters, not only for the South, but for other parts of the country. It may be of interest to note that one of the natives of Guilford county, Capt. A. M. Rankin, who for twenty years has been a conductor on what is now the Southern Railway, is president of two furniture companies, a stockholder in a third furniture company and in one of the national banks of High Point, a director of a mantel and table company and of the Bank of Randolph, beside being interested in enterprises in Greensboro and Ashboro. Alluding to him, Mr. J. J. Farriss, the editor of the High Point Enterprise, from whose valuable handbook of the town the facts in this article have been derived, and who, realizing the necessities and opportunities, has planned the publication of a furniture journal there, says:

"Captain Rankin is a credit to the company with which he has been connected

so long. His opportunity among our people in a local way is akin to that of Mr. M. V. Richards, the head of the immigration department of the Southern Railway, which is doing so much for the section of country through which the road runs."

AMERICAN PORTLAND CEMENT.

The Steady Growth of Its Manufacture.

In 1882 about 85,000 barrels of Portland cement were made in this country, and 370,406 barrels were imported. About 1890 the American industry began to develop, the figures of 1896 showing a production of 1,543,023 barrels and an importation of 2,989,597 barrels. In the next year the proportions of American production and importation were reversed, the American manufacture increasing to 2,677,775 barrels and the imports decreasing to 2,090,924 barrels. The next year the proportion in favor of the American product was greater, and in 1899 there were made in this country 5,146,064 barrels, while but 2,269,023 were imported.

These facts are derived from an article on the history of the Portland cement industry in the United States, published with other material in an attractive, comprehensive pamphlet by the American Cement Co. of Philadelphia, Pa. The beginning of the industry is found, perhaps, in the canal building under public auspices in the early part of the last century, when it was necessary to find close at hand the material for mortar that would hold together the stones at the locks or the walls under water. But the first American Portland cement plant was established in 1865 by David O. Saylor of Allentown, Pa. Small works were established near Kalamazoo, Mich., in 1872, which did not succeed, however. Other works were started in 1876 at Wampum, Pa., using limestone and clay, and at South Bend, Ind., in 1877, using white marl and blue clay. Of the six original works started before 1881, three were failures, as the industry did not offer a very encouraging outlook to the investor. Patents were perfected, however, in 1884 and 1885 simplifying the process, and were used in works started by the American Cement Co. of Egypt, Lehigh county, Pennsylvania, out of which has grown the enormous industry which has its center in the Lehigh district, the American material now being used extensively in office buildings and private dwellings, dams, bridges, factories, railroad stations, pavements and sewers. The handsome volume issued by the American Cement Co. has more than 150 illustrations of the buildings, the bridges, dams, canals, tunnels, etc., in the country in which its product has been used, together with many letters commending it from the standpoint of the engineer, and from that to the contractor. Among the first great works to use the American Portland cement were the jetties built by Capt. James B. Eads, and among the first buildings to use it was the Drexel Building, Philadelphia. The product of the American Cement Co., which has a daily output of more than 2000 barrels, has been used on such great works as the Cornell dam, the largest masonry dam in the world; the Jerome Park reservoir, the Reading subway, the Niagara Falls tunnel, the power-house of the Metropolitan Traction Co. of New York, the new East river bridge, New York, the electrical underground cable work of the Metropolitan railway system of New York, the United States postoffice at Washington, the Pennsylvania Railroad bridge at Rockville, Pa., 3820 feet long, the new Pennsylvania State capitol and numerous other structures in different parts of the country.

INVITED TO THE SOUTH.

A Cincinnati Party to Make a Tour of Observation.

Mr. D. A. Tompkins of Charlotte, N. C., has issued the following invitation to a select number of gentlemen of Cincinnati: "I take pleasure in inviting you to join a party to make a trip over some of the lines of the Southern Railway and its connections, for the purpose of looking into the present conditions and prospects for future development of the industrial interests of the South. A train has been placed at the disposal of the party by the Southern Railway Co., through the courtesy of its president, Mr. Samuel Spencer, for the purpose of the visit to the South."

About two months ago Mr. Tompkins was invited to make an address before the Commercial Club in Cincinnati, and the burden of his talk was the opportunity of developing commercial business for Southeastern products like cotton cloth, pig-iron and other products of the Southern States through Cincinnati to the Northwestern country, and for export to the Orient. Then, in turn, it was pointed out that the products of the Northwestern country might be passed through Cincinnati over the trunk lines of railway to the Southeast and its ports for export to West Indies and South America. There was opportunity of developing trade on both sides, of developing at the same time the principle of reciprocity in trade between the two sections and beyond each.

This naturally brought up the suggestion of some movement to promote a better acquaintance between the business men and the manufactures of the two sections. The subject was brought to the attention of President Spencer of the Southern Railway, who tendered the use of a special train for a select party to make a trip over the lines of the Southern Railway and its connections.

From the beginning of railroad construction in the United States the subject of trunk-line railway connection between the Southeastern ports and the Northwest has always been one of the very greatest interest. It transpires that by the last reorganization of the Southern this long-desired advantage for both sections has been accomplished. The trains of the Southern now run from all the principal South Atlantic ports direct to Cincinnati over its own rails. The celebration of this accomplishment and the introduction to each other of the business men and manufacturers of the two sections is a natural sequence of this accomplishment, and must result to the great benefit of both sections.

Food Value of Upland Rice.

Editor Manufacturers' Record:

I lately wrote you for the address of a Southern paper said to be devoted to the rice industry. In my studies of the science of nutrition I learned that the rice-fed nations, so-called, derive the necessary nitrogen, without which the starch of the rice would be wholly insufficient, from beans, peas and other leguminous plants, and from fish. The Japanese make use of the condiment known to us as "soy," which is made from the soybean, as we use butter. The soybean contains the largest proportion of nitrogen of any of the legumes. The common food of the poorest people in Japan, known as "miso," is a ferment of rice and soybean kept in stock throughout the country in all the poor families.

But my purpose in writing you today is to suggest that the varieties of upland rice requiring no irrigation ought to be more fully investigated in this country than they appear to have been. It is alleged that in Japan and India there are

varieties of upland or mountain rice growing even where the plants are sometimes covered with snow in the spring, which contain more nitrogen than the swamp rice, but do not make as handsome or salable a grain. I have never been able to verify these statements, and simply throw out the suggestion in order that the subject may be worked up.

EDWARD ATKINSON.

Boston, Mass.

RAILROADS IN MEXICO.

Their Extension Sought in the Interest of Mining.

[Special Cor. Manufacturers' Record.]

Monterey, N. L., Mexico, Jan. 22.

I mentioned in one of my previous letters that Don Francisco Armendaiz, Spanish consul in this city, procured a charter and a concession from the federal government to build a railroad from Monterey to San Miguel by way of Cerralvo, Mier and Camargo, but since the death of Armendaiz, which occurred on the 11th of December last, that project has fallen through. As the government considers the building of that line of prime importance, the secretary of communication and public works has issued a call for bids for building this line.

The miners in the Zacualpan district, State of Mexico, are making an effort to get a railroad connection with the Toluca & Tenango Railroad. The Zacualpan mining district is said to be one of the richest in the republic. The average ore exported from there runs from six to thirty kilos of silver to the ton, and from twenty to 150 grams of gold.

On the 14th the Monterey Steel Plant Co. sent a corps of engineers and grading men to the La Golondrina Station, on the Mexican National Railroad, to locate and build a road from that point to their iron-ore fields, which are situated in that vicinity.

The New York Silver Lead Trust have their representatives here looking over the Zaragoza mine, which is situated in the Diente mining district. Last Saturday afternoon your correspondent called on Senor C. Piazzini, the principal owner and manager of the mine, and he informed me that the experts who were examining it found that the mine was good property, and that they estimated that there was over 30,000 tons of good paying ore in sight. I then asked him how about the price. He replied that they asked \$1,000,000 gold for the mine, and that he expected that the trade would be closed by the latter part of the week.

American capitalists have made a bid for the Monterey Empressa street-car line. They have made an offer of \$200 per share for the company's interest, which makes the total valuation \$600,000. The original value of the shares was \$25.

Last Monday Mr. J. A. Hudson, the general superintendent of the Mineral Railroad, set a force of men to work to erect a passenger depot two blocks north of the Monterey & Mexican Gulf Railway depot.

The Monterey Steel Plant Co. is erecting two three-story brick buildings for offices on its grounds. It has already erected forty blocks of stone buildings for its employees. These will accommodate 450 families. Nearly all the foundations for the machinery are laid. It took over 500,000 brick for them and hundreds of tons of stone. Your correspondent paid a visit to them on the 16th, and saw hundreds of men at work on foundations for buildings. The company has already made railroad connections with the four roads that enter the city.

Col. J. A. Robertson received last week a telegraphic order from Havana, Cuba, for 1,000,000 of his dry-pressed brick.

During the past week the Linares Copper Co. received a shipment of iron-ore cars from Fraser & Chalmers of Chicago, Illinois.

Messrs. Griffith & Steel, railroad contractors, have secured the contract from the State and city to grade and pave with slag from the smelters the Calzada or boulevard from the city limits to the Topo Chico Hot Springs. It will take them about eight or ten months to complete it. They have also received a large contract from the federal government to get out rock in the City of Mexico. Mr. E. M. Griffith will have charge of the work at this end, and Mr. J. Y. Steel in the City of Mexico.

Mr. A. E. Stilwell, the president of the Kansas City, Mexico & Orient Railroad, is now in Mexico, and is forming a syndicate to float bonds to build the road. A contract has been let to build 300 miles of the road.

Mr. J. S. MacNamara, president of the Municipal Improvement Co., San Antonio, Texas, was in the city last week on his way to Tampico to investigate the asphalt fields in that district.

Mr. August Heid, a representative of the McCormick Harvesting Manufacturing Co. of Chicago, Ill., was in the city last week taking orders for machines.

Mr. H. C. Harrison, director and sole owner of the Cerralvo Smelting and Refining Works of Cerralvo, N. L., was in the city last week laying in supplies. His postoffice address is Cerralvo, N. L., Mexico.

Col. George W. Breckenridge, a prominent banker of San Antonio, Texas, arrived Saturday morning in his private car "Fernridge" and spent the day here, and at night he left for Tampico. He was accompanied by a party of capitalists.

EDMOND LEVAN.

OPENING COAL PROPERTIES.

No Opportunities Overlooked in the Birmingham District.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., January 29.

The inquiry for iron continues fine, but the resultant business is not in proportion. Large buyers were feeling the market and trying to squeeze prices, withdrawing therefrom on failure of accomplishment. The ordinary order trade was good enough to score a fair business for the week. It is difficult to state correctly the market situation. Large inquiry has not materialized, but selling agents still say we are just on the eve of this condition, and the fact that stocks with consumers are almost nominal lends color to their assertion. The figures obtained for iron the past week clearly show that concessions were necessary to effect sales in cases where, as to quantity, the orders were desirable. No. 2 foundry, which is quoted at \$11 for inside price, sold at \$10.75, and it looks as if \$10.50 was accepted. Some good sales (as to price) were made of No. 4 foundry, as 5000 tons were reported at \$9.50 to \$9.75. The lowest sale reported was at \$9.25. Gray forge is quoted yet by some at \$9.25, but one can buy it at \$9. In at least one case sale was made at \$8.85. No. 2 soft is yet in slim supply, and held generally at \$11.

The recent sale of Bessemer pig at \$13.25, Pittsburg delivery, draws special attention to the situation here. The freight from here to Pittsburg points is over \$4. Add that to quotations, and we can't begin to meet Bessemer prices. "It has come to this complexion," that Bessemer pig must advance or Southern pig decline. He is a sure winner who properly sizes up the situation and correctly solves the problem.

At the steel mill a very appreciable lot of business is still being declined for lack

of ability to care for it. Ever since the mill was projected Col. A. M. Shook, the second vice-president of the Tennessee Coal, Iron & Railroad Co., has been in charge of it. At a recent meeting in New York of the directors the office of second vice-president was abolished. This terminated the official connection of Colonel Shook with the company. So far no one has been named as his successor as manager of the mill. The mill has been in operation more than a year, and so far only about half its capacity has ever been utilized.

The position of general manager in the Alabama Consolidated Coal & Iron Co., heretofore held by Col. F. M. Jackson, has been abolished, and the duties are devolved upon the president of the company. Colonel Jackson has large coal interests in the district, and his attention will now be given to their development.

The foundry and machine shops of the Hardie-Tynes Company were burned this week. The machinery was rendered valueless in some cases. None of it escaped injury. The amount of damage will materially exceed the insurance. The fire came at an unfortunate time for the firm, as it had booked contracts that assured of a busy time for several months. As soon as the insurance is adjusted the rebuilding of the shops will begin. In their construction will be embodied the latest conveniences and improvements.

A charter has been granted to a new coal company styled the Little Cahaba Coal Co., at the head of which is H. F. De Bardeleben. The capital stock is \$50,000, to be increased as circumstances require. A combination with another interest is probable. In this event the combination will own and control 3000 acres of coal lands near Blocton, carrying what is known as the Underwood seam of coal. Spur track will be built to the mines by both the Louisville & Nashville and Southern roads, and the daily output from the mines will be 2500 tons of coal. This industry is very active, and efforts are constant to increase the output. Rogers, Brown & Co. are prominently identified with the coal interests of the district, and are forging right ahead in their efforts to add to the importance and value of this branch of trade. They are making rapid progress in the opening up and the development of their properties.

The Galloway Coal Co., with mines in Walker county and headquarters in Memphis, will remove the latter to this place, and will develop on a large scale its holdings. In all parts of the district wherever coal properties give promise of favorable results steps are being taken to open up new mines and to increase output of those that are being worked. Coal properties are yielding more satisfactory returns than ever before, and the bankable paper of a coal baron is gilt-edged.

The Birmingham Trust and Savings Bank is advertising for bids for the erection of its new building. It is to be ready for occupancy by September.

A practical demonstration of the fact that diversification of manufacturing is attracting attention is given by an elaborate display of hosiery by the Birmingham Knitting Mills, owned and operated by C. A. Yates & Co. In appearance they equal the product of any and all rivals, and carry the guarantee of honest work and good value. J. M. K.

The Pig-Iron Market.

Matthew Addy & Co., Cincinnati, in their iron-market report say:

"Apart from the great purchases of Bessemer iron in the valleys, which are still the talk of the trade, the feature of the situation is the steady inquiry. There is a regular and constant demand for all

grades of iron with the exception of mill metal. Purchases are being made for comparatively nearby deliveries, there being practically no call for any shipments after the first of the year. January, in spite of the fact that the holidays held on much longer than usual, has been a month of very satisfactory tonnage. In some directions there has been a softening in prices, but this has been more to meet competitive conditions than anything else. There is general activity among all consumers of iron. The makers of cast-iron pipe have begun their season unusually early. Car builders are full of work, while the general foundries are, many of them, greatly pushed, and the outlook points to an increased consumption of pig-iron."

Tennessee Coal, Iron & Railroad Co.

The financial report of the Tennessee Coal, Iron & Railroad Co. for 1900 shows that the year's earnings were \$2,536,161, or \$733,007 more than in 1899, and more than three times those of 1896, which were \$692,333. Fixed charges to be met in 1900 were \$721,913, giving a surplus of \$1,814,248. The company has now outstanding \$23,000,000 stock, on which three 2 per cent. dividends have been paid. Compared with 1899, the company increased its profits \$1,212,659 in the first five months of 1900, but decreased them \$479,652 in the last seven months.

To Help Texas Industries.

A constitutional amendment has been introduced into the Texas legislature authorizing incorporated cities to exempt from taxation any property they may see fit. This measure is in line with a resolution adopted by representatives of commercial organizations of the State who, in convention at Austin, came to the conclusion that as Texas is in much need of a more rapid development of its manufacturing industry, and as the policy of exemption from taxation for a term of years has had most satisfactory results in other States, such a policy should be adopted for Texas. This convention also favored the creation of a commissioner of manufacturing to help on industrial progress of the State. A convention of all the commercial organizations in the State will be held at Dallas on April 9.

Real Estate Agents Valuable.

At the last convention of the National Realty and Loan Society at Chicago Mr. M. V. Richards, land and industrial agent of the Southern Railway, took the ground that the real estate agent is a public benefactor. He attributed to him the following qualities: Long-range vision and quick perception; carefulness in scanning the business horizon and ability to foresee the lines of march of the forces of immigration and capital; skill in determining the best location for important enterprises. Mr. Richards said that for reliable real estate agents there were still rich opportunities in this country along the lines of the promotion of agriculture, manufacturing or other business, and called attention to the fact that the most generous awards have gone to those cities and towns which have availed themselves of the powers of real estate agents. As a matter of fact, he said, the development of the country will increase the necessity for the trained real estate man, always alert and quick to build along practical lines. He urged land-owners to recognize to the fullest extent the services of the agent, and residents of cities and towns to afford him their moral support, as, being in touch with the outside world, as well as local conditions, he is eminently qualified to add materially in the promotion of a community's best interests.

COMPETITION IN COMPRESSION.

Its Value Demonstrated for Cotton-Growers.

Here is an item clipped from the January 1st issue of the Chilton (Texas) Adviser. It is printed as an illustration of the trend of sentiment in cotton-growing sections throughout the South regarding new and improved methods of preparing cotton for market. Four years ago, perhaps three years, when the people at Chilton knew less of the round-bale system, and were told it was the exploit of a soulless monopoly, it is quite probable that antagonism would have been accorded a proposition to introduce the system there. But times change; people learn to look at things from new and broader standpoints. Chilton hasn't got a round-bale plant. Chilton notes that where there are such plants they surely promote healthy rivalry in buying cotton and better prices for cotton sold by farmers; that such a plant surely attracts more cotton, and therefore more trade and money to such point. Logically, therefore, Chilton being ambitious, wants a round-bale plant. If it prospers other industries follow it—a cottonseed-oil mill no doubt among the earliest acquisitions. And as at Chilton, Texas, so the same spirit is in evidence over the South. If a growing town in a good cotton-raising district is without a round-bale gin, one finds the business men in that town and the farmers who sell their cotton there ready to welcome the round bale—in many cases to offer inducements to secure it. Here is the item above alluded to, not lengthy, but certainly emphatic and to the point:

"There is quite a prevalent talk of the round bale at Chilton. Let the talk go on until it is realized by the building of as good a plant as there is in this part of the country. Then the farmer—the backbone of all other enterprises—shall get the best prices for his cotton by bringing it to Chilton, and everybody in town will share the benefits. Wage-earners will find twenty-four hours to the day, the merchant a more liberal patronage, and the real estate man a decided advancement."

With such a spirit one can hardly doubt the outcome. Later on this year, before the opening of a new cotton season, the Journal will tell of the installation of a round-bale plant at Chilton, Falls county, Texas, for it is an ambitious little town, the center of a cotton-growing district as fertile as any in Texas, and has usually gotten what its people set out in earnest to get.—Waco (Texas) Cotton Ginners' Journal.

Credit to Whom Credit Is Due.

Among the leading trade papers coming to this office on our exchange list, the most enterprising and readable is the Manufacturers' Record of Baltimore, and this fact is so patent to us that justice to our contemporary bids us say what we do in its favor.

The Baltimore Manufacturers' Record gives its readers more news items as to mill construction, enlargements of mill plants, where to locate new factories and other important information pertaining to the textile and other industries than any other trade paper we know of, and, for those who may be looking up new machinery of almost any make, the Manufacturers' Record is a safe guide to follow.

Our seventeen years' personal experience in the field of trade journalism has, we believe, entitled us to judge of these matters in an intelligent manner, and as our "verdict" can do us no harm, and may be of some benefit to many of our readers, as well as to the trade in general, we write as we do of the Baltimore Manufacturers' Record.

The only "out" we can see in the Manufacturers' Record is that it is too cumbersome to handle with ease. We believe that the day of large-sized magazines has gone by. Still, if large pages can be as easily filled with interesting reading matter, and readers are satisfied, we must presume the plan to be all right. It is not a serious objection, even though it be a little ungainly.

However, "all's well that ends well." The Baltimore Manufacturers' Record is good paying property, and, being well edited, as it generally is, should be a sure winner for merited patronage all along the lines of trade it so ably represents, especially through the South, whose most able champion and best exponent it is. That the "Sunny South" owes the Manufacturers' Record a deep debt of gratitude it can never fully repay is the candid opinion of the Mill and Shop News.—T. Oliver Dowd, Publisher the Mill and Shop News, Boston.

Literary Notes.

Hendricks' Architectural, Engineering and Mechanical Directory of the United States. Publisher, the S. E. Hendricks Co., 61 Beekman street, New York. Price, \$5.

The 1901 edition of this publication, which has been issued since 1891, is the most complete work of its kind which has ever appeared in this country. In its more than 1200 pages are more than 5000 classifications of every branch of the professions and trades interested directly or indirectly in the mechanical, electrical, architectural, engineering, construction, railroad, iron, steel, machinery, mill, mining and kindred undertakings in the United States. Of the 350,000 names in it, even the street addresses are given, except in the case of small towns, and the names, addresses and business of all the firms are given regardless of any patronage from them. All the larger trades or professions are classified by States, and in many of the manufacturing branches where the number of firms is few they are classified alphabetically. By it the manufacturer and the consumer are directly linked together, and as the book contains many valuable mailing lists of the entire country, it would be found to be invaluable to the buyer and seller, the architect, engineer, contractor, purchasing agent, manufacturer, mine, millman, quarryman, machine shop, boiler shop, rolling mill, foundry, railroad, electric power and lighting, plantation, shipbuilder, lumber manufacturer or dealer, hardware dealer, planing mill, and to every department of municipal, State and national government. There is not a material, specialty, apparatus or any kind of machinery used in these vast industries under which the name and address of the manufacturer does not appear properly classified. The work gives the name and address of the manufacturers of everything made from iron, steel, brass, bronze, aluminum, clay, stone, marble, granite, slate, wood, fiber, asphalt, asbestos, etc. In short, it enumerates every finished product manufactured from the above-named materials, not omitting the professions that specify, the dealer who handles, the manufacturers and contractors who are consumers.

The February issue of Leslie's Monthly is full of entertaining features, and while the number has a decidedly individual character, it appeals by its variety to the most diverse tastes. For those who love the water there is an article on the "Fishermen of the Great Lakes," a race trained to one of the most fascinating of trades. For the lover of art there is a pleasant paper of reminiscences of Ridgway Knight, filled with beautiful illustrations.

For those who prefer adventure, the "Sand Hogs of Caisson Sinking" will prove absorbing, and all who care for the study of human nature will read with keen interest the true history of "The Last of the Fighting Editors," a class which has given to the journalism of the West and South its piquant flavor. The strong, fresh interest in history which the crowding experiences of the last four years have given to the men and women of the United States is abundantly recognized. The best historian of our navy, Mr. John R. Spears, contributes a paper upon the "Mutiny on the Somers," that extraordinary occasion when, to preserve the discipline of the American navy, a son of the United States Secretary of War was hung at the yard-arm. And we wish to call attention to a charming romance of history, "Grandsir's Charge," which takes for its text the dramatic situation depicted upon the cover of the magazine, the "Surrender of General Burgoyne."

The charming "Cranford" folks have been written into a play, and make their appearance in the February Ladies' Home Journal. Even more dramatic is "The Beautiful Daughter of Aaron Burr," with her romance, her supreme happiness and crushing sorrows all crowded into a few years. "The Clock by Which We Set All Our Watches," "The Buffaloes of Good-night Ranch," "A Woman to Whom Fame Came After Death," "The Life of the English Girl," are features of interest. The last of "The Blue River Stories" is published in the February Journal, and "The Story of a Young Man" is nearing its conclusion, while "The Successors of Mary the First" increases in humorous interest. "Is the Newspaper Office the Place for a Girl?" is the theme of Edward Bok's editorial symposium, which is made peculiarly convincing by the opinions of editors and newspaper women. Caroline Leslie Field writes of "The Problem of the Boy," Helen Watterson Moody, "The Trying Time Between Mother and Daughter," and "An American Mother," "Why One Man Succeeds and His Brother Fails," "A Home in a Prairie Town" and a "Brick and Shingle Farmhouse" give architectural plans and detail.

Cassier's Magazine of illustrated engineering has among the articles in its February number "A New Power-Transmission Plant," by Charles L. Fitch; "Cranes at the Paris Exhibition," by Joseph Horner; "Riddles Wrought in Iron and Steel," by Paul Kreuzpointner; "British Vertical Steam Engines," by W. D. Wansbrough; "Some Power-Transmission Difficulties," by I. R. Edmunds; "Aerial Electric Traction," by Alton D. Adams, and "Reducing the Cost of Machine Work," by W. D. Forbes.

Contracts for Two Cruisers.

The Newport News Shipbuilding & Dry-Dock Co. has secured contracts for two of the cruisers for which bids were recently solicited by the government. Their aggregate cost is \$7,500,000.

In a letter to the Manufacturers' Record Mr. B. S. Wathen, chief engineer of the Texas & Pacific Railway Co., confirms the report that the company proposes extending what is known as the New Roads branch to a point near the mouth of the Red river during the present year. It is stated that the company will probably ask for a permit to build a bridge across the river, but no arrangements have been made as yet for further extension beyond it.

The mills at McKinney, Texas, shipped last week fourteen carloads of flour, destined for five States in this country and for Liverpool.

FOREIGN TRADE.

This department is designed to set forth opportunities for the extension of the trade abroad of American manufacturers, and to record facts about the rapidly-developing commerce of the South.

THE CLASHING OF INTERESTS.

Possibilities in Trade Relations of Russia and America.

Quite significant of recent modifications of economic view-points in this country is a letter which the Manufacturers' Record has received from the Ingersoll-Sergeant Drill Co. of New York. The letter is as follows:

"An effort is being put forth by the beet-sugar interests of this country to prevent the importation of sugar from Russia by having the Secretary of the Treasury abrogate the clause in our present reciprocal arrangements with Russia wherein the said sugar is brought into this country under the favorite nation rate of duty. This will prohibit any further imports of sugar from Russia by putting in force the tariff of the Dingley bill against said sugar, which will, with the internal-revenue tax, if the sugar manufacturers of Russia must buy their own goods, effectually put a stop to any further importations from that quarter.

"While the Ingersoll-Sergeant Drill Co. does not contend that the beet-sugar interests shall not have the widest possible scope in the exercise of their rights, we do, however, maintain that it is the duty of every American manufacturer to take warning as to how his own interests are to be affected by this proposed action.

"If the Secretary of the Treasury carries out the arrangement which has been proposed, and which, we believe, is suspended for about sixty days, it will be promptly met by retaliation from Russia in the shape of an increase in duties against all classes of American-manufactured goods ranging from 25 to 30 per cent. This will be in effect also prohibitive as to any further exports from this country, and there will be left in the lurch hundreds of American manufacturers with half-complete orders on their hands and a new basis of estimates as to expenses which can hardly be met by increase of numbers, as many of the goods which are now being made in American factories to be consumed in Russia have been arranged for by specific contracts, which contracts take no account, of course, of the changes in existing tariff, such changes being entirely unexpected.

"You have, we assume, the fullest access to the tables of the Treasury Department as to imports and exports, but if our source of information is correct the total value of sugar imported from Russia during the fiscal year ending June 30, 1899, was but \$340,000, while during the same period this country sold to Russia manufactured goods amounting to \$10,000,000. We are told that during the first ten months of 1900 we sold to Russia \$9,440,000 of goods. This, of course, means goods sold direct and going into Russia via the Baltic and Black sea ports, and takes no account of the millions of dollars' worth of goods which have been imported into Russia via England and Hamburg.

"It is our belief that the National Association of Manufacturers of America should form committees and deputations, and every company or private concern, whether a member of this association or not, should in every way possible prevent the consummation of this very radical action.

"The public should be informed, if it does not already know, that upon the completion of the Trans-Siberian Railway

system the field which will be offered in Siberia for American machinery of all kinds will be unprecedented. You are, of course, aware that under our present arrangements all articles manufactured in this country are admitted absolutely free of duty to the port of Vladivostock and other Asiatic ports of Siberia and Russia.

"We are writing you on this subject, as we have written the National Association of Manufacturers of America, hoping to have your co-operation and interest in giving the manufacturers of America the fullest possible warning before this radical action is taken by the Treasury Department at Washington. Our interest is to encourage, and not discourage, foreign governments to admit American-manufactured product free of duty, and this measure to which we have referred, if carried out, will seriously curtail opportunities for doing foreign business. We would therefore like to have the co-operation of the scientific press in preventing this action."

For Trade With Germany.

Henry Newald, European representative of American interests of Berlin, writes to the Manufacturers' Record as follows:

"I lived for nearly twenty years in the States, in Southern and Central America, and a short time in Japan. I traveled all over those countries, and learned about many trades. For nearly six years I have been in Berlin representing the interests of large American companies. During this time I have visited nearly all the important cities in Europe, and have made many acquaintances and gained many important connections. My business is not that of an agent, but it is simply a promoting and negotiating business. I do not sell any goods, but I interest good houses and companies on this side for American representation and agencies and in the sale of American manufactures. I organize companies for the sale of American articles, or I organize them to buy or lease American patents.

"If any American manufacturer or inventor comes to Europe or Berlin he will find with me excellent offices, which he can use free of charge. He will find here not only splendid rooms equipped in American style, in an American office building, the 'Equitable,' but he will find the information he needs about Europe. He will have German, English and French typewriters and correspondents, and business directories of many cities of Europe. He will not only feel himself at home in these offices, but assistance in arranging his business connections all over the continent. For all this I do not charge anything except a small percentage in case he should form any business connections through my assistance.

"At present there is a great chance to sell American patents for any special machinery in Germany, as the bicycle business is losing ground more and more. Therefore, the bicycle manufacturers are anxious to buy patents for typewriters, cash registers, adding machines and such articles which they may be able to manufacture with their bicycle machinery. I have applications for new articles in the hardware line for good special tools and tool machines. Anything new in the stationery line is always received with great interest on the German, Austrian and Russian markets. I have application for the agency for a good and cheap typewriter, for a good cash register similar to the National cash register, for electric automobiles, anything in the office-furniture line, office specialty and so on. There are also few applications in special chemical articles, either for agency or to buy or lease the patents. I have two excel-

lent firms in Berlin and Moscow on hand who would like to take agency for a good commission house in lard, hams, machine oil, bacon, etc.

"There are many articles in the States for which German houses would gladly take the agency and introduce them on the German market. But before all, certainly it is necessary that persons who want a connection in Germany through me should send me samples if possible, at least good photographs, and a large quantity of catalogues and printed letters. It is always necessary to distribute those catalogues and printed matter to at least fifty firms until you can find somebody with whom you can close the arrangement. Besides this, the firms must send me a clear statement of what they manufacture and how they manufacture, the lowest prices, and if they have competitors and where these competitors are, or whether they have been represented here in Germany, or whether their competitors have representatives here."

To Snip Mulberry Leaves.

In writing to the Manufacturers' Record Henry Newald of Berlin says:

"A customer of mine in Constantinople asks me to inquire in the States whether there is an instrument manufactured to be used to cut part of the leaves of the mulberry trees, but so that neither the leaf itself nor the tree is injured in any way. He claims that there are some manufacturers in the States who make some kind of shears or scissors for similar purpose. He says that this instrument would be sufficient if it would be adjustable.

"My business friend is one of the largest wholesale dealers and commission agents in Constantinople, who supply the whole Orient with those articles. He says if I can get a proper connection for him he would be willing to contract for large quantities, and says that he can sell 20,000 to 30,000 of this instrument each year if the factory would give him the sole agency for this article for Turkey, Egypt, Persia and Southern Russia.

"The financial standing of this house is above any question. In case you know anybody who manufactures such a little machine, I beg you to put me into communication with him, asking him at the same time to send me one or two samples and a small quantity of printed matter without delay. I will put the factory then in direct communication with my business friend in Constantinople."

Implements for India.

A correspondent at Madras, India, of the Manufacturers' Record writes that he desires to obtain samples, with lists of wholesale prices, of gray shirtings, gray mulls, gray jacconets and bleached long-cloth, as he believes it is possible to introduce them in the Madras market. He believes that American manufacturers have the advantage in proximity to raw material over English and continental ones. He adds: "As you are aware, India is a large cotton-producing country, and the present plowing system is attended with great trouble and expense to the cultivators. If any of your engineering firms could send out plows to be worked with engine power of two to three horse there is a field here to introduce these. These could also be used for paddy and other seed cultivation. The cost must come within the means of an ordinary cultivator. In the course of time some cheap and simple pumping machines could also be introduced, but as the Indians, as a rule, loathe any innovation of the practice to which their forefathers were accustomed, we have first to deal with the intelligent cultivators, and once the ability of these machines are found,

there is no knowing what the demand will be."

Expansion of Shipping Interests.

The expansion of American shipping interests, especially the business from Southern ports, is made the subject of an exhaustive article in a recent issue of the New York Journal of Commerce. The article refers to the new service of the Leyland Line between New Orleans and Great Britain. It is also announced that St. Louis capitalists are interested in the Pan-American Steamship Co., recently incorporated in New Jersey to operate a line of vessels to China and Manila. A Southern port may be one of the terminals of this company. The Virginia Line, already referred to in the Manufacturers' Record, has established a semi-monthly service between Norfolk, London and Liverpool with a fleet of six vessels.

In the coastwise trade the Atlantic Coast Steamship Co. will have six vessels in service operating between Georgetown, S. C., and Northern ports. Five steamers are now being constructed for this corporation.

A Good Record.

The system of transporting cattle and other live-stock across the Atlantic has been so perfected that the loss in transit is so small as to be almost nominal. During the year 1900, ships of the Johnston Line running between Baltimore and Liverpool made the following record: Quernmore, ten trips, carrying 6419 head of cattle, losing 4; Vedamore, ten trips, carrying 5900, losing 7; Indore, nine trips, carrying 5677, losing 2; Oakmore, seven trips, carrying 4037, losing 4; Barrowmore, four trips, carrying 2397, losing 4; Rowanmore, four trips, carrying 2958, losing 2. The total number shipped by the six steamers was 27,388; total loss, 23—making an average loss percentage of .083. The same line from Boston to London carried 2639 and lost 3. Such a record shows the excellence of the system employed on the Johnston steamers for carrying live-stock.

Exports for Turkey.

M. U. Maier of Constantinople, in a letter to the Manufacturers' Record, suggests among American goods in demand there jewelry for the head, hides and skins and iron goods. He writes that although American houses have made great efforts to establish direct relations with that market, they have failed because of the too onerous conditions imposed upon buyers. He suggests that if American manufacturers would be willing to adapt themselves to the mode of payment in vogue in continental countries and in England, settlement after receipt of goods and their delivery free at a European port, such as London, Liverpool, Hamburg or Antwerp, it would not be long before they would secure a part of the import trade of Turkey.

Lake Vessels for Ocean Service.

The use of steamers built on the Great Lakes for Atlantic coastwise service is continually increasing. The steamship Paraguay, built by the American Shipbuilding Co., recently loaded cargo at Galveston for Boston. The Paraguay has a cargo capacity of about 3600 tons, is 256 feet in length, 42½ feet beam and 26½ feet in depth. It will be noted that her capacity is as large as that of an ordinary tramp steamship. She is constructed of steel throughout, and can maintain a speed of fourteen knots an hour. It is understood that the Paraguay is to remain in service between Gulf and North Atlantic ports during the present year.

Refrigerators for Brazil.

United States Consul John J. Girmondi, at Santos, Brazil, believes that American refrigerators would sell well in Brazil, as they have hardly been introduced into private houses, and only about one in twenty meat dealers use them. He writes that the unceasing demand for ice in restaurants, hotels and other public places, especially by Americans, Englishmen and Germans, is increasing the consumption of ice in Santos and in the State of Sao Paulo. The use of ice is almost unknown in the fish markets, as well as in the vegetable and meat markets.

Fountain Pens in Germany.

United States Consul H. W. Harris, at Mannheim, Germany, writes that as but a few of the 1500 students at Heidelberg University use fountain pens, but carry their ink bottles to and from their classes, a market for fountain pens might be developed there. Judicious efforts on the part of American manufacturers, he believes, might result in large sales of medium-sized safes for stores and offices, which should prove as popular as the desks, typewriters, file cases and cash registers which Germans are rapidly adopting.

Connections in Russia.

E. Antipas of Odessa, writing to the Manufacturers' Record regarding his efforts to direct American trade in his direction, offers his services in following up local matters in Russia, in promoting the efforts of American commercial organizations to extend trade to that country, to exploit Russian mines, to point out to capitalists opportunities for the construction of railroads, electric car lines, telegraph systems, etc., and the development of mineral lands.

A 1,000,000-Bushel Elevator.

The official announcement is made that the Texas & Pacific Railroad Co. has decided to let contracts in the near future for the elevator to be built at Westwego, near New Orleans. The structure will have a capacity for 1,000,000 bushels of grain, and in connection with it will be built about 600 feet of wharf front. It will considerably add to the export facilities of New Orleans.

Shipbuilding at Pensacola.

According to advices from Pensacola, Fla., a company has been formed to construct a shipbuilding plant in that city, capitalized at \$600,000. It is announced that a dry-dock will be constructed large enough to accommodate a 5000-ton vessel, also two smaller docks. It is understood that F. O. Howe & Co. of Pensacola are interested in the matter.

Notes.

The value of exports from Newport News, Va., in the calendar year 1900 was \$33,901,371, nearly \$3,900,000 more than in 1899.

Magnus K. Giaver of Christiania, Norway, writes to the Manufacturers' Record that he is interested in American margarine oil and fat for butter-making, leather and typewriters.

Frederick M. Taylor of Philadelphia is interested in the plan to establish a steamship line between Philadelphia and New Orleans. The project is favored by the business men of the two cities.

A dispatch from Austin, Texas, says that a great flow of oil has been struck in a well near Portland, Texas, within a few miles of the Gulf coast, but nearly 300 miles from Beaumont.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

To Aid the Brunswick & Birmingham.

The convention in the interest of the Brunswick & Birmingham Railroad at Brunswick, Ga., was attended by nearly 350 representatives from various towns and cities along the proposed route, as well as Atlanta, Savannah and elsewhere. Many of the delegations offered to donate right of way for the road within their town and county lines, also the necessary site for depots and other terminals. A number of delegations were authorized to offer subscriptions to the capital stock of the company and make other concessions of a substantial character.

A quantity of rails for the Brunswick section of the line has already been received, and are to be laid as soon as the roadway is completed.

Commenting upon the connection of Col. E. C. Machen with the Brunswick & Western Railroad Co., the Free Press of Harrisonburg, Va., says:

"The Colonel will be remembered by our people as a man of wonderful personal magnetism, untiring energy and great resources, and more especially for his sacrifice of his own personal interests for the good of the enterprise and his friends. We have no doubt that with proper co-operation the Colonel will complete this great undertaking of building a road from the rich freight-producing district of Birmingham, through the great pine forest of Southern Georgia, as well as rich agricultural sections, to the harbor at Brunswick. Certainly, if he receives proper encouragement in co-operation from the people along the line, they will get the railroad, and get it quick. And if we can judge from the newspaper reports and from the action and talk of the people with whom we came in contact while on our recent visit to the South, we believe it is up to the Colonel to build that railroad."

New Orleans' Frolic.

From the piles of applications for hotel accommodations at New Orleans, it is calculated that the great crowd on the occasion of this year's Mardi Gras festivities will fully equal any previous one, and the railroads, appreciating the situation, will again extend the time limit for cut-rate tickets. For more than a week before the Carnival several striking entertainments typical of the Crescent City will be given—by Consus on January 25, by the Falstaffians on January 30, by the High Priests of Mithras on February 4, and by the Knights of Momus on February 14, followed by the French ball on the 16th. Rex, with his court, will arrive on the 18th, and, escorted by the military, will proceed to the city hall, where the keys of the city will be turned over to him. At night the Krewe of Proteus will have their spectacular parade, tableaux and ball. At noon on Tuesday the parade of Rex will take place, and the Mystic Krewe of Comus will parade at night. Such is the rush for accommodations and such the attractions this year that intending visitors, to secure comfortable quarters, should reach New Orleans not later than February 10.

Mr. Stilwell in Mexico.

A. E. Stilwell and a party of American capitalists, who are interested in his new United States & Mexico Trust Co., arrived here yesterday to complete the organization of the company. From present indications this will be one of the strongest trust companies on the continent. Several American multi-millionaires are

back of it, and some prominent Mexican capitalists will be included in the directorate.

Mr. Stilwell said yesterday: "I can't give the details of the organization yet. The purpose of our visit is to arrange the details at this end, and I have no doubt that the whole matter will be in shape to make public within a few days. There will be Mexican capital in the company. It will be represented on the board of directors. The company will have headquarters here and also in the United States, probably in Kansas City. That is all I can say about it now."

In regard to the progress of work on the Kansas City, Mexico & Orient Railroad, Mr. Stilwell said: "We are now working on the Sinaloa coast. Seventy miles have been graded in Oklahoma, twenty miles in Kansas and twenty-five miles in Texas. The work of construction is progressing as rapidly as possible at these four points. There are nine engineering corps now out on the work. The survey for the road is practically completed. Only 150 miles of the line near the coast in Sinaloa are as yet unsurveyed."—City of Mexico Herald.

Projects Around Norfolk.

A number of important railroads have been projected within the last year by Norfolk and Northern capitalists in the vicinity of Norfolk. The Bayshore Railroad Co. has a plan to build from Norfolk to Ocean View. The Chesapeake Transit Co., it is understood, has let a contract to Isaac A. Walker & Son of Philadelphia to build its road between Norfolk and Cape Henry, a distance of about twenty miles, with possibly a branch to Virginia Beach. Abram C. Mott of Philadelphia is president of the company, and J. E. Cole of Norfolk, vice-president. The Norfolk & Lynnhaven Railroad & Terminal Co. is another corporation which proposes constructing an electric line between Norfolk and Lynnhaven Bay, a distance of about eight miles. If built, this road will be operated in connection with a steamer service in Tidewater Virginia and North Carolina. Grading has also begun upon the electric line between Norfolk and Pig Point, which may be constructed during the present year. With the exception of the Chesapeake Transit Co.'s project, all are electric lines.

An Important Project.

The project to extend the New Orleans & Northwestern Railroad from Bastrop, La., its present terminus, to Little Rock has resulted in the formation of the Little Rock & New Orleans Construction Co., with \$750,000 capital. The incorporators are William R. Garrison, William B. Harding and Meredith Dryden. It is understood, however, that they are acting as representatives of the New Orleans & Northwestern Railroad Co., which is back of the plan. As already stated in the Manufacturers' Record, the extension will be 138 miles in length, and when built will complete a new system from Little Rock to Natchez, Miss., on the Mississippi river, where connection will also be made with the Illinois Central. The New Orleans & Northwestern is controlled by the Hyde syndicate of Titusville, Pa., and extends from Natchez to Bastrop.

Roanoke to Fincastle.

The proposed electric road between Fincastle and Roanoke, Va., recently referred to in the Manufacturers' Record, is being promoted by Mr. James Godwin, cashier of the Bank of Fincastle, who secured a charter some time ago, also right of way. In a letter to the Manufacturers' Record Mr. Godwin writes that the road would

be about twelve miles in length, and the route is on a low grade. At present Fin-castle is not connected with any railway line, and the new road would connect it with the Norfolk & Western at Roanoke. A connection would also be formed with the Chesapeake & Ohio. Mr. Godwin would be pleased to correspond with anyone who might desire to assist him in carrying out the project.

Self-Help the Best Help.

Mr. Harry B. Spencer has been appointed general manager of the St. Louis & Louisville division of the Southern Railway Co., succeeding George C. Smith, who has resigned. Mr. Spencer is a son of President Spencer of the Southern, and has worked his way up from a railway clerk to his present position. He has filled the office of assistant superintendent of a portion of the same system in Kentucky, and later was appointed assistant general manager of the line of which he is now the executive head. Mr. Spencer is but thirty years old, but he already has attained a wide reputation for his ability.

Illinois Central Projects.

At the special meeting of the stockholders of the Illinois Central the decision of the directors to increase the capital stock from \$60,000,000 to \$66,000,000 was ratified. It is announced that the additional capital will be expended in the construction of another grain elevator at New Orleans, as well as other improvements, and that a part of it may be used in building the line which has been surveyed from Baton Rouge, La., through the southern and eastern part of this State. A company called the Louisiana, Mississippi & Alabama Railway Co. was incorporated several months ago, acting, it is understood, in the interest of the Central.

Santa Fe Interested.

It is reported that the Gulf, Colorado & Santa Fe Railway Co. is interested in the Lake Charles & Rice Belt Railroad, recently referred to in the Manufacturers' Record. This company has been chartered to build east and west through Southern Louisiana between Lake Charles and New Orleans, a distance of 180 miles. It is stated that at Lake Charles the Rice Belt Railway will make a connection with a line to be built from Marshall, Texas, to Lake Charles, a distance of 150 miles. Among the incorporators of the Rice Belt Railroad are C. A. Lowery and A. B. Eastman.

Waycross to Fitzgerald.

A dispatch from Waycross, Ga., announces the completion of the Waycross Air Line from its present terminus to Fitzgerald. This extension, which is thirty miles long, makes the total length of the Air Line seventy miles. Arrangements have already been made for train service between the towns, and it is understood that the company is considering an extension beyond Waycross. The road is owned by a syndicate, in which Savannah capitalists are largely interested. W. G. Raoul is president, and George D. Wadley, vice-president and general manager.

Port Arthur to Houston.

Estimates are now being completed for the proposed railroad between Port Arthur and Houston, Texas, being promoted by the Port Arthur, Houston & Western Railway Co. According to the engineer's statement, the road, which will be ninety miles in length, can be built for less than \$10,000 per mile, owing to the favorable character of the country. W. McDaniel

of Port Arthur is one of the principal promoters and president of the company, which is principally composed of business men of Port Arthur.

Louisville to Frankfort.

According to a dispatch from Louisville, Ky., David Morison and C. L. Morely of Cleveland, Ohio, are interested in the proposed electric line from Louisville to La Grange through the Pewee valley. It is stated that the rails have already been purchased for the road, and that construction work will begin about March 1. It is possible that the road may be eventually completed to Frankfort, the capital of the State, a distance of fifty miles. A construction company has been formed to carry out the project.

Railroad Notes.

The Southern Car Works at Memphis, Tenn., has closed a contract with the Choctaw, Oklahoma & Gulf Railroad Co. to build 200 freight cars.

Mr. A. R. Swarty has been appointed agricultural agent of the Kansas City Southern system. This office has recently been created by the company.

The International & Great Northern Railroad Co. has given an order to the American Car & Foundry Co. for 1000 freight cars, and has also placed an order for fifteen locomotives.

The Seaboard Air Line, it is understood, is considering additional communication between Savannah and its terminals on Hutchinson's Island by the construction of a bridge at a cost of about \$100,000.

The various business bodies of Memphis, Tenn., have adopted resolutions in favor of the continuation of the fast-mail service between Eastern and Southern cities, and have memorialized Congress to this effect.

Relative to the company recently organized under the title of the Orange & Northwestern, a correspondent of the Manufacturers' Record writes that it has been capitalized at \$200,000, and will build thirty miles of line immediately, surveys now being in progress. G. Bedell Moore is president, and Alexander Gilmer, vice-president. No bonds will be issued, as the company has ample capital to complete the line.

The Kirby Tie Co. of Houston, Texas, of which John H. Kirby is president, has secured a contract to supply the Atchison, Topeka & Santa Fe Railroad Co. and its Southwestern division with 7,000,000 ties, to be delivered within the next five years. It is understood that the material is to be used for improvements to the present line and the extensions which the Santa Fe intends constructing. The order will represent 250,000,000 feet of timber.

The Western Maryland Railway Co. has opened the extension recently constructed near Hagerstown, which is five miles in length. By the use of the extension a grade of seventy-six feet to the mile is avoided and a considerable saving effected in power thereby. It has been the policy of President Hood to reduce operating expenses by cutting down grades, and to this fact is partly due the remarkable increase in net earnings of the system.

The Ohio Valley Electric Railway Co. has changed its name to the Camden Interstate Railway Co. and elected J. N. Camden, Jr., of Versailles, Ky., president; S. D. Camden, secretary, and J. L. Caldwell of Huntington, W. Va., treasurer. It is stated that the company has made arrangements to place an issue of \$1,500,000 in 5 per cent. bonds to finance its road, which is an electric line in operation between several cities in West Virginia and Kentucky, including Huntington and Catlettsburg.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

THE ROLLER PROCESS.

Short and Long Staple Ginned Without Damage.

Mr. J. E. Cheesman of the Cheesman Cotton Gin Co., 27 William street, New York, in a letter to the Manufacturers' Record says:

"You asked me for some news items relative to the work of our company, and I give you the following, which may be of interest to you as well as to some of the ginners in the Sea Island field:

"It may be of interest to your readers to know that the new Cheesman roller gin in its operations in the South has proved conclusively that it is possible to gin short upland cotton as well as the longer staple by the roller process, and thereby preserve the staple of the cotton intact.

"In the century that is just passed we had all come to the conclusion that there was no use in searching further for any method in the ginning of cotton other than the saw-gin process.

"The saw gins have been speeded way beyond their natural capacity, and the quality of the lint has therefore been sacrificed in order to turn out a greater capacity.

"Competition between saw ginners has compelled the ginner to adopt this method in order to save money. The spinners year by year have complained bitterly of the condition of the cotton received by them, claiming that it was more brutally treated each year than the preceding year.

"In a recent editorial entitled 'Better Cotton Wanted' the New York Commercial said: 'The chief desideratum is not so much quantity, as quality in staple.' This is the foundation upon which the Cheesman gin rests its claims. This year in the South it has met the demand of this editorial. Repeated tests in comparison with other roller gins as well as saw gins proves that the Cheesman gin in its operation upon seed cotton equals the work of hand ginning.

"This coming season will see several ginning plants in operation in the cotton field fully equipped with Cheesman gins, and this will give the spinner what he long has wished for—a large enough number of bales to give roller ginning a fair test in the mill.

"The only reason why roller ginning has not heretofore become popular in the South has been for the fact that the other roller gins are very small in capacity. When the capacity of a roller gin is increased to that point where its output will amount to two or three bales of cotton per day it will become a factor, and a very important one, in the ginning of cotton in this country."

The Cotton Movement.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, for January 25, the amount of cotton brought into sight during the 147 days of the season was 7,374,689 bales, an increase over the same period last year of 718,016 bales; the exports were 3,834,768 bales, an increase of 662,696 bales; takings by Northern spinners were 1,306,916 bales, a decrease of

364,488; by Southern spinners 719,139 bales, a decrease of 17,374.

COTTON IN RUSSIA.

British View of a Possible Slight Competitor of America.

The Textile Mercury of Manchester quotes H. A. Cooke, the British commercial agent in Russia, to the effect that the Russian ministry of finance is rejoicing at the encouragement given by the dear-ness of raw material and fuel to the development of Russian-Asiatic and Caucasian cotton-growing. On this point the Mercury says:

"Manufacturers, with the possibility of acquiring the Russian raw material (in quality in no wise yielding, it is said, to American, and at times superior to the latter) considerably cheaper than the foreign article, have meanwhile completely suspended negotiations for the American market, and for the next few months will manage almost exclusively on the home supply. Up to the date of Mr. Cooke's report, the 15th ult., it was supposed that already about two-thirds of the whole crop of the first sort from American seed had been brought up.

"This increased demand for the Russian product cannot but extend the development of cotton cultivation not only in Central Asia, but also, and still more so, in the Caucasus. The progress already made is very rapid. In the Fergan territory, for instance, the area under cultivation has increased, in comparison with last year, by over 30 per cent., which will enable the Russian market to cope more easily with foreign scarcity and artificial rises abroad. Further progress in this direction, if it should not entirely relieve Russian mills from the necessity of buying foreign cotton, will, at all events, in the opinion of the Commercial and Industrial Gazette, weaken the influence of the foreign market on the Russian manufacturing industry, and release the latter from too great a dependence on Liverpool, Bremen, etc. This will mainly depend, however, on the increase of available areas for cultivation and on improved irrigation, both of which conditions there are satisfactory grounds for believing will be fulfilled.

"One considerable obstacle to be removed from the path of Russian cotton-growing, however, is the hand-money, or payment in advance system, now prevalent in Central Asia, for, being paid before his crops are grown, the Turkestan cultivator ceases to interest himself in the quality of the cotton, mixes the seeds indiscriminately, etc. With the removal of this and other attendant evils, the Gazette foresees a favorable future for Russian cotton plantations."

Benefits in Roundlap Bales.

From a statement regarding the American Cotton Co.'s roundlap bales, published in Shepperson's "Cotton Facts," we take the following:

"In the roundlap bale the planter gets pay for all the cotton he brings, and the spinner gets all the cotton he pays for."

"Last season again demonstrated the incomparable superiority of the American Cotton Co.'s roundlap bale. Demand outran supply. With the additional presses established in the South the company expects to meet the increased demand of 1900-1901 both for long and short staples.

"Roundlap savings at the mills begin with the unloading of the cars, and do not cease until the intermediate lapper is reached.

"The more these bales are used the more their advantages appear. A comparative test of roundlap and square cot-

ton was recently made by the Massachusetts Cotton Mills of Lowell, Mass., to determine the relative shrinkage in weight by drying out. The cotton was opened, loosened by hand, placed in new bags, weighed and allowed to stand 184 hours before being reweighed. The square cotton lost 2.283 per cent., the roundlap cotton 1.271 per cent., a saving in favor of the latter of 1.012 per cent., or 5.06 pounds per bale of 500 pounds net.

"The Boston News Bureau Summary of October 19, 1900, published the following:

"The treasurer of one of the leading cotton mills of Massachusetts says:

"We have used during the last twelve months over 30,000 roundlap bales of cotton put up by the American Cotton Co. In our estimation this is the best method of baling cotton. * * * The economy in the use of roundlap bales is in the character of the bale, which does away with labor in the picking-room at the mill, and the fact that we get practically 100 cents' worth of cotton for every dollar paid out. The square bale in its journey from the South to the mill at the North will lose on an average at least two and three-quarters pounds per bale, as compared with a loss of not over one-quarter pound in the roundlap bale.

"On the whole, we believe we derive from three-sixteenths to one-quarter cent per pound benefit through the use of the roundlap bale from the time cotton is shipped until it is turned out as yarn in the mill."

Vesta Cotton Mills.

It is announced that the Vesta Cotton Mills of Charleston, S. C., will be removed to a site already selected near Gainesville, Ga. This plant has 28,000 ring spindles and 740 narrow looms, and is capitalized at \$250,000. The company proposes increasing capital stock to \$500,000, of which amount Gainesville investors are asked to subscribe \$100,000. This will be readily taken, much of it having already been subscribed. New buildings will be erected, the main structure to be 130x300 feet in size, four stories high, after plans by Lockwood, Greene & Co. of Boston. The owners of this plant are also interested in the Spartan Mills at Spartanburg, S. C.; the Paolet (S. C.) Manufacturing Co. and the million-dollar mill now under construction at New Holland, near Gainesville, Ga. John H. Montgomery of Spartanburg, S. C., is president of the companies referred to.

Cedartown's Latest Mill.

The \$100,000 cotton factory to be located at Cedartown, Ga., announced last week, will be built for 10,000 spindles, although but 4000 spindles will be installed to start with. The product will be fine hosiery and underwear yarns, colored goods exclusively, necessitating a dyeing plant. Site has been selected, and both building and machinery contracts will be awarded soon. The Adamson Mill Co. will be formed to own and operate the plant, the organizers being, as mentioned last week, Messrs. Charles Adamson of Cedartown, Ga., and Philadelphia, Pa.; Franklin Baker, Jr., of Philadelphia, and Edmond Alston of New York. Correspondence should be addressed to Mr. Adamson at 119 South Fourth street, Philadelphia.

Knitting-Mill Enlargements.

The Jonesville (S. C.) Knitting Mills, mentioned last week as to increase capital, will make extensive enlargements. The increase will be from \$12,000 to \$50,000, and this amount will be expended for new machinery, buildings and other betterments. New brick building will be

erected 60x100 feet, two stories high, with boiler, engine and dyehouse extra; 100 knitting machines will be added, making 140 in all, with necessary ribbers, loopers, presses, etc. A new 100-horse-power engine will also be installed. The product will be 750 dozen pairs of hose daily.

Textile Notes.

The Waxahachie (Texas) Cotton Mills has increased capital stock from \$100,000 to \$125,000; this company is contracting for a 5000-spindle plant.

Justin C. Jackson of Wilsonville, Ala., will build a knitting mill to cost \$7000. He is now prepared to examine bids on equipment, so it is stated.

A prominent business man of Portsmouth, Va., is about to convert his establishment into a hosiery knitting mill. Further details will be known later.

Messrs. D. J. Griffin (East Montgomery avenue), G. N. Henson and others of Chattanooga, Tenn., will organize a company for the erection of a cotton-bating mill.

F. E. Abenau of Augusta, Ga., is investigating relative to inducements for the location of a knitting mill in South Carolina, probably at North Augusta, South Carolina.

The annual meeting of the Dublin (Ga.) Cotton Mills this week resulted in an increase of capital from \$100,000 to \$125,000; the plant is nearing completion, and its 5000 spindles are expected to be running soon.

The Walton Cotton Mill Co. of Monroe, Ga., will increase capital from \$75,000 to \$100,000. The company also has in view the enlargement of its plant to 10,000 spindles; at present has 3500 ring spindles and 100 looms.

Philadelphia (Pa.) parties have made a proposition for the erection of a 5000-spindle mill at Clarksville, Ga. Subscription to the amount of \$25,000 are asked, and have been promised. The company expects to announce organization and names of interested parties soon.

The newly-organized Lexington (Miss.) Cotton Mills, reported recently, has ordered plans and specifications for plant, and will place contracts soon. It is not yet decided whether yarns or cloth will be made, but the spindles will number 5000 at the start. The investment will be \$100,000. J. E. Stanford is secretary.

J. E. Wylie (colored) of Wylie, Texas, previously noted as to build a cotton factory, will remodel buildings at once and arrange for installation of equipment. The latter will include 3000 spindles and complement, colored operatives only to be employed. Steam-power will be converted into electricity and supplied to the machines.

A dispatch from Charlotte, N. C., says that the board of governors of the Southern Cotton Spinners' Association has authorized a committee to formulate a plan for the organization, with home capital exclusively, of a mercantile and commission company, with head office in Charlotte and with branches at Philadelphia, New York and Boston, to handle the product of Southern yarn mills.

The Norris Cotton Mills of Easley, S. C., noted last week as increasing capital from \$150,000 to \$200,000, will make improvements and install additional machinery. The company is also building a dam which will give nearly 500 horse-power at a distance of 5000 feet below the mill. This power will be carried back to the machinery electrically to operate the new spinning, carding machines and other additional equipment being installed. This is a 6592-spindle plant.

The Aetna Mills of Union S. C., char-

tered recently, has permanently organized, electing W. H. Sartor, president-treasurer; Messrs. A. H. Foster, Emslie Nicholson, T. C. Duncan, J. A. Fant, J. T. Douglass, Geo. A. Gray and W. H. Sartor, directors. This company's project was announced in detail last month, Geo. A. Gray of Gastonia, N. C., to prepare plans for, build and equip the mill. The investment will be about \$200,000 for a 10,000-spindle fine yarns mill.

QUOTATIONS OF COTTON YARNS.

By Buckingham & Paulson, New York, Philadelphia and Chicago, January 29.

No. 10s-1 and 12s-1 warps.....	14 @15
No. 14s-1 warps.....	14 1/2 @15
No. 16s-1 warps.....	15 @15
No. 20s-1 warps.....	16 @16 1/2
No. 22s-1 warps.....	16 1/2 @17
No. 26s-1 warps.....	17 @17 1/2
No. 6s to 10s bunch yarn.....	14 @14 1/2
No. 12s-1.....	14 1/2 @15
No. 14s-1.....	15 @15
No. 16s-1.....	15 1/2 @16
No. 20s-1.....	16 1/2 @17
No. 22s-1.....	16 1/2 @17
No. 26s-1.....	17 @17 1/2
No. 8s-2 ply soft yarn.....	14 1/2 @15
No. 10s-2 ply soft yarn.....	15 @15
No. 8s-2 ply hard.....	14 1/2 @15
No. 10s-2 ply hard.....	14 1/2 @15
No. 12s-2 ply hard.....	14 1/2 @15
No. 14s-2 ply.....	14 1/2 @15
No. 16s-2 ply.....	15 1/2 @16
No. 20s-2 ply.....	16 1/2 @17
No. 22s-2 ply.....	16 1/2 @17
No. 26s-2 ply.....	17 @17 1/2
No. 8s-3, 4 and 5 ply.....	14 1/2 @15
No. 10s-3 ply chain warps.....	16 1/2 @17
No. 12s-3 ply chain warps.....	17 @17 1/2
No. 14s-3 ply chain warps.....	17 1/2 @18
No. 16s-3 ply chain warps.....	18 @18
No. 20s-3 ply chain warps.....	18 1/2 @19
No. 22s-3 ply chain warps.....	19 @19
No. 26s-3 ply chain warps.....	19 1/2 @20
No. 8s-3 ply hard twist.....	14 1/2 @15
No. 10s-3 ply hard twist.....	15 @15
No. 12s-3 ply hard twist.....	15 1/2 @16
No. 14s-3 ply hard twist.....	16 @16
No. 16s-3 ply hard twist.....	16 1/2 @17
No. 20s-3 ply hard twist.....	17 @17 1/2
No. 22s-3 ply hard twist.....	17 1/2 @18
No. 26s-3 ply hard twist.....	18 @18

Market very dull; prices nominal.

Cottonseed-Oil Notes.

The German steamer Granada sailed last week from Norfolk, Va., with a cargo valued at \$337,730. Among her cargo were 16,791 sacks of cottonseed meal, valued at \$17,625, and 200 barrels of cottonseed oil, valued at \$3000.

The market for cottonseed products in Texas is steady, with stocks of oil held firm by the mills at interior points. Prime crude oil is quoted 23 to 24 cents, and prime summer yellow at 26 to 26 1/2 cents, all f. o. b. at interior points. Prime cottonseed cake and meal are steady at \$21 to \$21.25 per ton delivered at Galveston; cottonseed at stations, \$11 to \$12 per ton.

The Upson County Oil Mill at Thomas-ton, Ga., commenced operations last week, and is now running on full time. This is said to be one of the most complete oil-mill plants in the South, having all the most modern appliances in the way of machinery, etc. The entire plant is fire-proof, and has its own electric-light system. Dr. W. F. Baker is president of the oil-mill company.

The following are the official quotations on cottonseed and cottonseed products as posted at the New Orleans Cotton Exchange: Prime refined oil, in barrels, 30 cents per gallon; off refined oil, in barrels, 29 cents per gallon; prime crude oil, loose, 24 1/2 to 25 cents per gallon; off do., 23 1/2 cents per gallon; prime cottonseed cake, \$23.50 to \$23.75 per ton of 2240 pounds; off do., nominal; prime cottonseed meal, \$23.50 to \$23.75 per ton of 2240 pounds; off do., nominal; soap stock, 1 cent per pound; linters, per pound—choice, 4 1/2 cents; A, 4 1/4 cents; B, 3 3/4 cents; C, 3 1/2 cents; cottonseed, in sacks, delivered in New Orleans, \$14 per ton of 2000 pounds; in bulk, delivered in New Orleans, \$13 per ton of 2000 pounds.

At the annual meeting of the Baltimore Chamber of Commerce the retiring president, J. Hume Smith, in his report pointed to the construction of the isthmian canal and the enactment of the ship-subsidy bill as important for the commercial progress of the country. Messrs. Charles P. Blackburn, Thomas H. Botts, Ernest L. Dinning, Richard C. Wells and William Rodgers were elected directors.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record, Baltimore, Md., January 30.

The general tone of business in the market for phosphate rock is firmer, in sympathy with the improvement in all fertilizer ingredients. There is some demand for rock from out-of-town buyers, and local manufacturers are also bidding for some round lots. The tone of business at mining points in the Southern phosphate belt is improving, and the market generally is in better tone. South Carolina miners are beginning to ship more freely with the easier tone in ocean freights. In Florida the shipments for the current month have been fair, and it is stated that the February shipments will be much heavier. From Fernandina a number of steamers are about due to load next month, and at Tampa foreign and domestic shipments are expected to show a material increase. In Tennessee the market for rock is very steady, and at Mt. Pleasant the various mining companies are holding stocks quite firm. The nominal prices are as follows: 75 per cent. rock, 5 and 3, \$2.75; 78 per cent., 4 1/2 and 2, \$3, and 78 per cent., 3 and 2, \$3.50.

Fertilizer Ingredients.

The ammoniate market has shown remarkable strength during the past week, with a large volume of business reported. There has been a good demand from the South, and the Eastern business is better. Prices all along the line show an advance over last week's quotations.

The following table represents the prices current at this date:

Sulphate of ammonia (gas)....	\$2 75 @ 2 80
Nitrate of soda, spot Balto.....	2 00 @ 2 10
N. York.....	1 82 1/2 @
Blood.....	2 50 @ 2 55
Azotine (beef).....	2 47 1/2 @ 2 50
Azotine (pork).....	2 47 1/2 @ 2 50
Tankage (concentrated).....	2 47 1/2 @ 2 50
Tankage (9 and 20).....	2 45 @ 2 50 & 10
Tankage (7 and 30).....	20 50 @ 21 00
Fish (dry).....	27 50 @ 30 00

Phosphate and Fertilizer Notes.

The Centreville Phosphate Co. in Hickman county, Tennessee, commenced mining last week, and will be in complete working order in a few days.

The steamship Sidra cleared from Savannah, Ga., last week with 1757 tons of Florida high-grade phosphate rock among her cargo for Rotterdam, and the steamship Yestor for Bremen with 1800 tons of phosphate and other cargo.

The shipments of phosphate rock from the port of Pensacola in long tons for the year 1900 by months were as follows: January, 16,342; February, 8314; March, 9211; April, 33,670; May, 32,250; June, 15,550; July, 20,290; August, 12,252; September, 8150; November, 8261; December, 9228; total, 173,523 tons.

The Mt. Pleasant Chronicle reports the shipments of phosphate rock from that section of the Tennessee phosphate field from January 1, 1900, to December 31, 1900, as follows: Total gross tons 359,630, of which 235,331 tons went to domestic points and 124,299 for export. The total production for 1899 was 398,559 gross tons, showing a decrease for 1900 of 38,929 tons.

At Fernandina shippers estimate the February shipments in phosphate rock as very heavy. The steamers Peareth, Heim, Dania and Vectime and three others, names unknown, are expected to load phosphate rock during that month. Receipts of rock from mining sections continue liberal, and are accumulating. The first of the fleet of steamers to arrive will load about the 5th of February.

The output of coal in the George's Creek-Cumberland coal region during 1900 was 3,176,342 tons.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., January 30.

The volume of business in the local lumber market last week showed about an average amount for this period of the season, while the general conditions surrounding the situation are somewhat improved. Numerous inquiries are coming to hand daily from other than the usual sources, while the Northern and Eastern demand is fairly active. North Carolina pine is said to be in good shape; stocks everywhere in the North Carolina pine belt are well held, and by no means excessive. Manufacturers are generally well prepared for any urgent demand that may arise. There is a moderate foreign inquiry, which, with lower freight rates assured, will develop some actual business. Georgia pine is very steady, with a fair inquiry. In hardwoods there is considerable business with nearby towns, and while the market is quiet, prices are about steady for desirable stuff. Poplar is selling well, and there is some demand for ash and oak. The foreign export trade is fair, while ocean freight rates are easier. Advices from the London market are to the effect that consumers are coming into the market and purchasing more freely.

Savannah.

[From our own Correspondent.]
Savannah, Ga., January 28.

A more than average volume of business has been developed in the local lumber market during the past week, and the indications are that the month of February will be one of considerable activity in all avenues of the lumber trade. There is a steady demand from Northern and Eastern centers, and also from South America, and to the United Kingdom and Continent large shipments are going forward by almost every steamer. During the past week 5,077,442 feet of lumber left the port, distributed as follows: 608,335 feet for Buenos Ayres, South America; 572,704 feet for Philadelphia, 2,778,729 feet for New York and 1,117,674 feet for Baltimore. The activity at nearby Georgia ports is quite as pronounced, and at Brunswick the market for all wood products is firm, with the demand from Northern sources good and the foreign business of better volume. At Darien the record of shipments for 1900 was highly encouraging, over 100,000,000 feet of lumber and timber going out of the port. Most of the shipments were foreign. These shipments did not include the millions of feet that were towed to Savannah and St. Simons and shipped from these ports. The present year promises to be equally prosperous, as present indications denote a very active spring and summer trade. The offering of vessels is more liberal, both for the domestic and foreign business, and rates are easier. Sail freights to Baltimore and eastward \$4.50 to \$5.75, including Portland. Steamer rates Savannah to Baltimore \$5; to New York, \$6.50 to \$7.25 to dock; lightered to Boston, \$8.50. The schooner R. M. Walls, 561 tons, was chartered last week to load here for New York at \$5.75, and schooner W. E. Downes, Brunswick to New York or Perth Amboy with cross-ties at 14 cents.

Pensacola.

[From our own Correspondent.]
Pensacola, Fla., January 28.
The movement at this, one of the principal Gulf ports, in timber and lumber

has been unusually active, shipments exceeding that of any month for the past year. The demand has been accelerated partly by the decline in ocean freights and the reduced stocks at domestic and foreign ports. A number of vessels have recently been chartered to load here for the United Kingdom and Continent, and the month of February will likely record a heavy volume of trade. In two weeks of the present month nearly 16,000,000 feet of timber and lumber were shipped, and the total for the month will likely reach 26,000,000 feet. There is a good South American trade doing, and with Cuba a very satisfactory business has been developed during the past year. There is with all the saw-mills in this section an abundance of orders, and manufacturers view the outlook as very promising. Among the various enterprises reported for the week is one of considerable magnitude in which the Alger-Sullivan syndicate is interested. This company, it is stated, intends to build a saw-mill with a capacity of 300,000 feet a day, which will have all the modern appliances for the handling of timber and logs. The site selected for this plant is at the head of the Big Escambia river, where the company has purchased large tracts of timber land. The syndicate is preparing to erect another mill at Foshee, Ala., with a capacity of 100,000 feet a day. Charters reported last week were: A Spanish steamer, 1653 tons, from the Gulf to Greenock or Liverpool with timber at 105/; February; a British steamer, 983 tons, from the Gulf to picked ports, Continent, with timber at 112/6, February; Russian bark Uku, 411 tons, from Sabine Pass to Esbjerg with timber at 120/, and Russian bark Iris, 753 tons, from Sapelo to United Kingdom or Continent with timber at 110/ for sawn and 37/ for hewn.

Mobile.

[From our own Correspondent.]
Mobile, Ala., January 28.

The outlook at the moment in the timber and lumber industry of this port is more satisfactory than at the close of the old year. The demand for lumber is becoming more decided as the season advances, and the South American and Cuban demand is good. It is stated that an English syndicate building a railroad in Cuba has placed orders for 5,000,000 feet of lumber with Mobile manufacturers, and expects to require 45,000,000 more before the close of the current year. The timber trade of the port is brightening up, with reduced rates of freight, and it is said that a number of vessels have been chartered to load timber during February which will likely reduce stocks in the booms about one-half. Vessels are now to be had to load for United Kingdom or continental ports at 100/ to 105/. The market for sawn timber is now steady at 11 to 12 cents per cubic foot, 40-foot basis, and for hewn timber 13½ to 14 cents per cubic foot is the latest quotation. There is a good demand for logs, and receipts at Moss Point are quite heavy, owing to the rise in the upper rivers. Pine saw logs are quoted \$5 to \$8 per 1000 feet; cottonwood, \$4 to \$5; poplar, \$8, and oak, \$8 to \$12. Among the shipments last week were steamer Attrara for Delfzill, Honduras, with 504,492 feet of sawn timber; a steamer for London, England, with 1,184,820 feet of timber and 468,175 feet of lumber, and schooner Omega for Cardenas, Cuba, with 200,678 feet of lumber.

Lumber Notes.

The large saw-mills of Eastman, Gardner & Co. of Laurel, Miss., which have been shut down for repairs since Christmas, have started up to run day and night as usual.

The steamship Georgetown of the new Atlantic Coast Steamship Co. arrived at New York from Georgetown, S. C., on the 23d inst. with 1,049,378 feet of yellow-pine lumber.

The receipts of lumber at New Orleans for the week ending the 25th inst. amounted to 2,658,000 feet, and for the season to 57,758,621 feet, against 47,910,687 feet last season.

The local saw-mills at Chattanooga, Tenn., have received on the present tide in the Tennessee river over 8,000,000 feet of logs, and they will have sufficient logs to run them until August.

The Denver City Tram Co. of Denver, Col., has purchased from S. R. Lee of Pollock, La., president of the Georgetown Lumber Co., 50,000 cross-ties, to be delivered within four months.

The Texas Lumber, Tie & Timber Co. of Burke, Angelina county, has been chartered, with a capital stock of \$10,000. The incorporators are H. H. Emmett, E. B. McCall and T. A. Burk.

A fire on the 27th inst. destroyed \$10,000 worth of hardwood lumber on the yards of Eisenhaur, MacLea & Co., West Falls avenue, Baltimore. The stock destroyed was valued at \$20,000; insured for \$18,000.

Mr. W. L. Miller, manager, resident at Wilmington, N. C., of the Acme Tea Chest Co. of Glasgow, Scotland, has in port 300,000 feet of gum logs ready for shipment by the next steamer chartered by the company.

The Virginia Cedar Works, recently incorporated, is now approaching the completion of its factory. The building will be located in West Norfolk, Va., and the plant when completed will be of the most modern equipment.

The Udell-Sampson Woodenware Co. at St. Louis, Mo., was partially destroyed by fire last week. About \$35,000 worth of stock was destroyed and the building damaged to the extent of \$5000. The loss is fully covered by insurance.

The timber and lumber shipments from Darien, Ga., for the year 1900 aggregated 112,434,552 feet, valued at \$1,408,668. The above shipments do not include the millions of feet that were towed to Savannah and St. Simons and shipped from those ports.

The National Lumber Co. of Baltimore, Md., was incorporated last week, with a capital stock of \$50,000. The company will deal in real estate, lumber and timber lands. The incorporators are Robert St. John Stewart, Joseph L. White, Timothy J. Hooper, William E. Perego and Renot D. Wathen.

The John H. Kirby Tie Co. of Houston, Texas, has just closed a contract with the Atchison, Topeka & Santa Fe Railway system to furnish 7,000,000 pine railroad ties to that company. A contract for the delivery of 400,000 oak ties to the Ayer & Lord Tie Co. of Chicago has also been closed by the Kirby Tie Co.

It is stated that J. M. Carpenter and John A. Stone of Knoxville, Tenn., backed by Pennsylvania capital, have purchased 10,000 acres of timber, iron and copper lands in Monroe county, Tennessee, paying \$300,000 for the property. They will build a railroad to the property, and will develop every product of the tract. It is understood that saw-mills, furniture factories, woodenware plants and the like will be established.

The Sessoms Land Co. was incorporated last week at Savannah, Ga. The capital stock of the company is placed at \$80,000, with privilege of increasing it to \$500,000. The company proposes to hold, purchase and dispose of timber and other lands. The incorporators are W. W. Beach, W.

C. Powell, Alexander Sessoms, B. F. Bulard, D. S. Sinclair, John H. Powell, Robert B. Powell and others. The principal office of the company will be located in Savannah.

The following vessels cleared last week from Jacksonville, Fla., with lumber and other wood products: Schooner Wentworth for St. Pierre, Martinique, with 274,457 feet of lumber, and schooner Jas. A. Garfield for Paramaribo, Dutch Guiana, with 335,615 feet; the schooner Jessie Lena for New York with 273,600 feet of lumber, and schooner Grace Davis with 280,000 feet; the schooner Lottie H. Russell cleared for New Haven with 260,000 feet of lumber; the Clyde Line steamer George W. Clyde for Boston with 250,000 feet of lumber and 2000 cross-ties, and the Comanche for New York with 423,000 feet of lumber and 6500 bundles of shingles.

It is stated that the Sullivan-Alger syndicate is preparing to erect in the northern part of Escambia county, Florida, the largest saw-mill in the South. It will have a cutting capacity of 300,000 feet a day, and will be fitted with the most modern type of machinery. The site selected is at the bend of Big Escambia river. The plans have been drawn and accepted, and the work of construction will begin as soon as deemed practical by the stockholders. The syndicate is also making preparations to build another large mill at Foshee, Ala., which will have a capacity of about 100,000 feet a day, and the plans of the stockholders include the erection of several other mills in different portions of the syndicate's large timber tracts.

The saw-mills in Alabama cut over 130,000,000 feet of yellow-pine lumber for the eleven months of 1900, ended November 30, and practically the same amount was shipped. The cut of the mills in the State and their aggregated shipments for the eleven months as shown in the report of the secretary of the Southern Lumber Manufacturers' Association submitted at the meeting held in Memphis on January 16, was as follows: To the New England States, 4,705,635 feet; to New York, 6,551,370 feet; Pennsylvania and New Jersey, 5,553,319 feet; Michigan, 234,243 feet; Ohio, 9,123,566 feet; Indiana, 6,347,486 feet; Illinois, 4,816,641 feet; Iowa, 68,168 feet; Minnesota, 16,000 feet; Wisconsin, 57,290 feet; Missouri, 417,116 feet; Tennessee and Kentucky, 11,101,834 feet; not specified, 16,006,192 feet; local, 26,914,596 feet; export, 39,044,805 feet; total shipments, 130,958,261 feet. Total cut, 130,609,472 feet.

It is announced from Jacksonville, Fla., that a foreclosure and mortgage sale has been ordered for February 4 at Kissimmee of 2,000,000 acres of timber, prairie and swamp lands in the case of the Columbia Avenue Savings Fund, Safe Deposit, Title & Trust Co. of Philadelphia versus the Disston Land Co. of Florida. It is expected that the property will fall into the hands of the new management of the Disston Land Co., in which event it may be immediately opened and developed.

Several thousand tons of high-grade zinc ore from the Missouri-Kansas mining districts are to be exported to Europe, according to a dispatch from Joplin, Mo., the first cargo to be shipped in March. The sales in the Joplin district ended January 26 amounted to 9,561,400 pounds of zinc ore and 1,150,600 pounds of lead ore, valued in all at \$137,265.

Colonel Ernst, chief of the United States engineers, estimates that the cost of deepening the Curtis Bay channel in the Patapsco to thirty feet and widening it to 250 feet will be \$196,000.

MECHANICAL.

A Successful Feed Mill.

The accompanying illustration shows the Big Giant Feed Mill, which has been marketed successfully since 1876. Previous to that time lack of merit had forced other mills off the market, but the new mill promptly proved its superior qualities and efficiencies for the purpose for which it was designed and came into wide usage.



BIG GIANT FEED MILL.

This practical corn and cob mill will do more work, it is claimed, with one horse than most mills can accomplish with two horses. The features of this mill and its operation to the greatest satisfaction has sold the apparatus all over the world, hardly a country being possible of mention but that the Big Giant is in operation there. The N. M. Field Manufacturing Co. of St. Louis, Mo., is the manufacturer.

An Extensive Roofing Contract.

Improved roofing plays an important part in the construction of modern struc-

Feltine Roofing, with interlocking lap, has met with unqualified success.

The company's recent contracts included several of a very extensive character, one of which is indicated by the accompanying picture of the machinery and transportation building at the Pan-American Exposition. There was used on this building 200,000 square feet of the Rubber Feltine Roofing, with interlocking lap. The same roofing was also used exclusively on all the buildings of the exposition, aggregating about 2,000,000 square feet. The company believes this to be the largest contract for roofing ever placed in the United States, and obtained only after strenuous competition with many other brands.

Literature relative to the Trinidad concern's various products may be obtained by application direct.

Improved Freight Elevators.

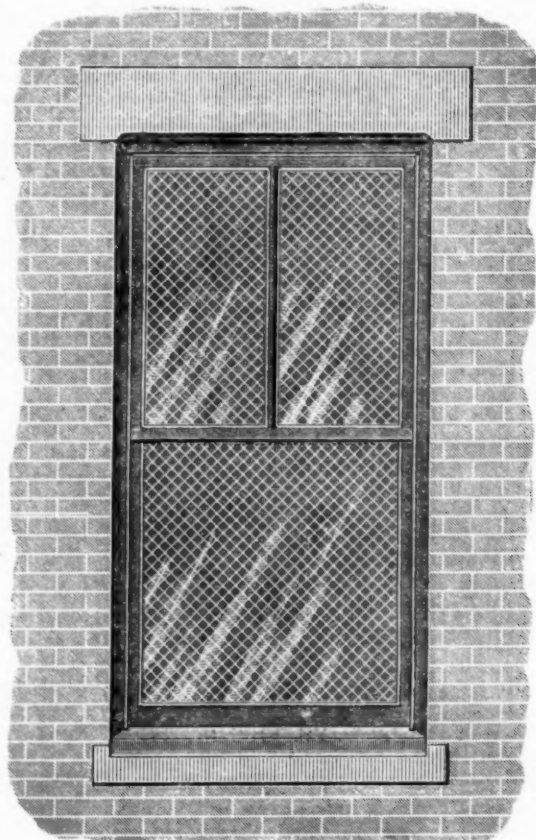
The increasing demand for economical and efficient freight elevators in manufacturing where belt power is available has resulted in important improvements in the belt-driven machine. The accompanying illustrations present improved machines in this class. These types have been installed in many factories and warehouses during the past year, especially in the new Southern cotton mills. These decidedly practical elevators comprise the chief product of Messrs. Faunt Le Roy & Co., Baltimore, Md., their latest improved equipment embodying the most approved appliances for smoothness of action and safety. The elevator is equipped with the curved worm, the improved type of worm gearing (claimed to be superior

device stops the machine if the platform should meet with an obstruction in descending, and prevents the cable from unwinding while the platform is stationary. The travel of the platform is automatically stopped at terminal landings by an improved appliance which positively prevents the platform from running into the hatchway timbers. Operators of elevators will appreciate this device.

The platforms are constructed of hard-

Wire-Glass Window.

Of interest to every constructor of buildings is the wire-glass window illustrated herewith. This patented window is designed to act as a protection against the spread of fire, and not only accomplishes this purpose, but possesses many other advantages not existent in previous products of its character. This hollow metal window frame and sash glazed with wire



WIRE-GLASS WINDOW.

wood, iron and steel, and equipped with a powerful safety device, which locks the platform to guideways in case the cables break.

Messrs. Faunt Le Roy & Co. also build a hand-power elevator, also well known, which is sold with an attachment for operating by power when desired. This rig is especially suitable for small buildings where the travel is limited and it is at times desired to run by hand when the power is not operating.

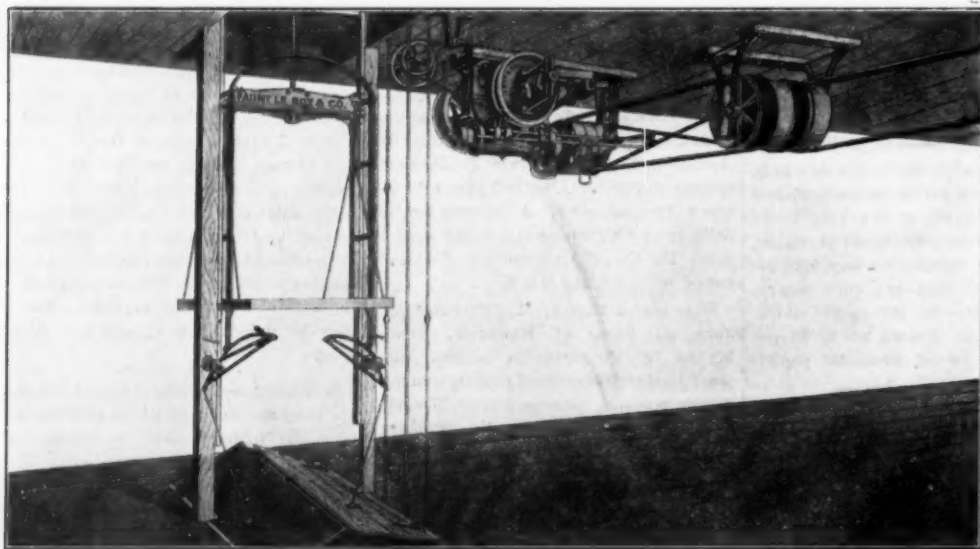
glass is manufactured by the Smith-Warren Co., East Cambridge, Mass. The window offers positive resistance to fire; it aids in discovering fire, as the blaze will disclose itself; it can be broken through by the stroke of the fireman's axe; it resists the attack of burglars because of the noise that breaking through would necessarily cause, and can be adjusted to close automatically in case of fire. It is stated that these windows are displacing fire shutters, and the reasons for



BUILDING AT PAN-AMERICAN EXPOSITION, COVERED WITH 200,000 SQUARE FEET OF RUBBER FELTINE ROOFING, WITH INTERLOCKING LAP.

tures of all characters. Inventors and manufacturers have introduced new raw materials and methods of production that supply roofing of such merit as to meet all

to the ordinary straight worm), possessing great power, durability and positive action, adopted by the United States Navy wherever worm gear is used.



IMPROVED FREIGHT ELEVATORS.

the requirements of the exacting contractor or building owner.

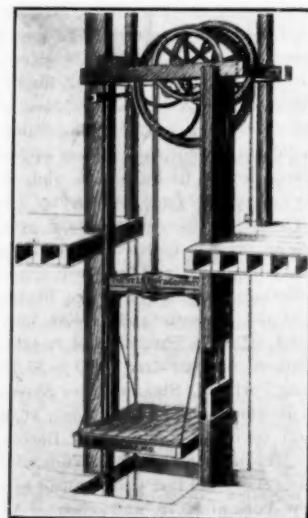
The Trinidad Asphalt Manufacturing Co. of St. Louis, Mo., is prominent in this branch of manufacture, and its Rubber

The worm and wheel are entirely enclosed in a cast-iron housing, which protects these important parts from injury and allows the gearing to revolve submerged in an oil-bath. The slack cable

The firm has been identified with elevator manufacturing over twenty years, and installed elevator equipments in some of the most important structures built. Inquirers can obtain prompt replies.

this are apparent in the new window's advantages.

A detailed description of the window's construction will be supplied by the maker to those requesting it.



Builders' Specialties.

Improvements in all branches of industry and art have been numerous in recent years. Every industrial avenue of importance has felt this tendency, the building trades being one of them. The designing and production of specialties used in building construction has been the work of experienced engineers and manufacturers, and many devices are constantly being introduced to facilitate and improve such construction. The accompanying illustrations refer to such devices. Messrs. Hurd & Co., 570 West Broadway, New York, are introducing these new patented specialties in conjunction with their patented wire form of New York Wall Tie.

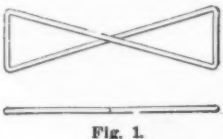
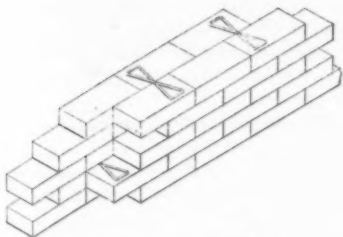


Fig. 1.

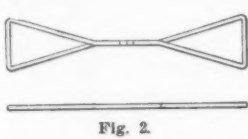
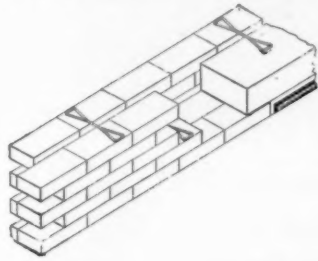


Fig. 2.

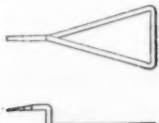
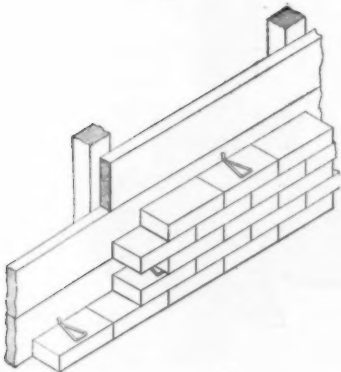


Fig. 3.

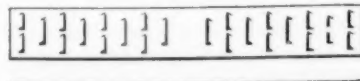
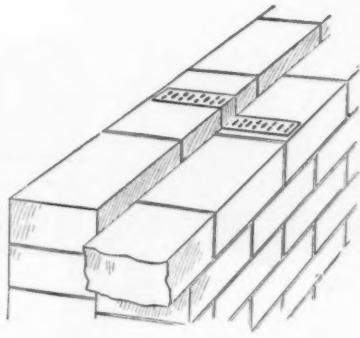
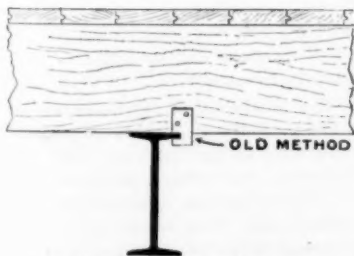
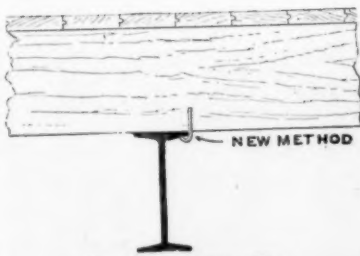


Fig. 4.



OLD METHOD

New York Sleeper Clip.



NEW METHOD

New York Sleeper Clip.

BUILDERS' SPECIALTIES.

The wall tie is employed as a substitute for "headers" in the construction of brick walls. Formerly a brick was laid at prescribed intervals transversely to the ordinary course of stretchers, so that the ends of the brick were visible according to the form of bond employed. With wall ties only the stretchers are used, and the bricklayer may work much more rapidly and neatly. The tie here illustrated consists of a small piece of galvanized wire bent to form two inverted wedges. Like any wall tie, it is made so as to connect two bricks, the mortar or cement actually locking and thus binding the wall together. It is used for binding face brick, terra-cotta and hollow walls. It has met with great favor, being used in many buildings under construction in New

York, Boston, Chicago and Pittsburg. The tie is cheap, strong and easily handled. It is in one piece, and has one thickness.

The standard form, plan and edge views shown in Fig. 1, is made of No. 9 galvanized wire. It is six and three-quarters inches long and two inches wide at the base of each wedge, so that it is absolutely bedlocked.

The drip form for walls with air space, application shown in Fig. 2, prevents moisture from traveling to the inner wall, a series of sharp points on the underside of the wire between the wedges assisting the moisture to form small globules, and thus allowing them to drip.

The goose-neck form, Fig. 3, is intended for veneer work, and is designed in one

inches wide, is made from .025 inch cold rolled steel, sheared and formed so that inwardly directing projections insure a perfect grip. It is known as the New York Sheet-Metal Wall Tie.

Another specialty is the New York Sleeper Clip, made of three-sixteenths-inch steel wire. Illustrations show the old method and the application of the new clip. It is seen that there was the labor of holding the large piece of sheet iron in place in this old method, and the additional labor of driving two nails. The new method is a clip all in one piece, and it merely has to be driven into the wooden beam, the sheared point allowing it to drive as readily as a nail. It is convenient to handle and readily driven to place, besides being much cheaper than the old style, and can be ordered any size or length. Special lengths and sizes can be quickly made to order.

Direct-Connected Electric Exhauster.

The accompanying illustration shows one of the interesting adaptations of electric apparatus. The adaption consists of a centrifugal fan or exhaust blower driven by a direct-connected motor, for which service, by reason of the identity of motion of the driving and driven elements of the combination, the electric motor is peculiarly adapted. The constant resistance to the rotation of the fan-wheel is overcome by a constant torque acting on the armature.

The fan may be designated as a right-hand bottom horizontal discharge exhauster, and is composed of a rotating blast-wheel and a stationary casing. This casing consists of a circular discharge mouthpiece, cast integral with the circumferential rim, to which is bolted the two side-plates. In the plate nearer the motor is provided the opening for the motor shaft, while in the other is located the circular air inlet. A distinction is usually made between "blowers" and "exhausters," the latter having but one inlet and the former having one on either side.

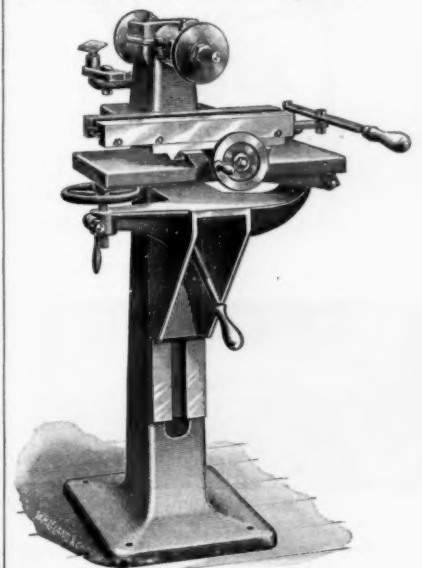
The blast-wheel is built up of steel-plate blades, with backwardly-curved tips bolted to spider arms carried on a cast-iron hub. The dimensions of these

as the square of the velocity, while the power expended varies as the cube thereof. The volume delivered is approximately proportional to the number of revolutions. Hence the loss entailed by using too small a fan and speeding it up to secure a given output is entirely obvious.

The motive power of the fan shown herewith is a Lundell motor manufactured by the Sprague Electric Co., and is of the general enclosed type. A cast-iron base supports the motor at the proper height. The fan itself is a product of the Buffalo Forge Co. of Buffalo, N. Y. The details of construction may be such as to allow the attachment of any standard motor. These fans are constructed in sizes up to No. 11 B, which requires fifty horse-power when developing six ounces pressure at 1100 revolutions per minute.

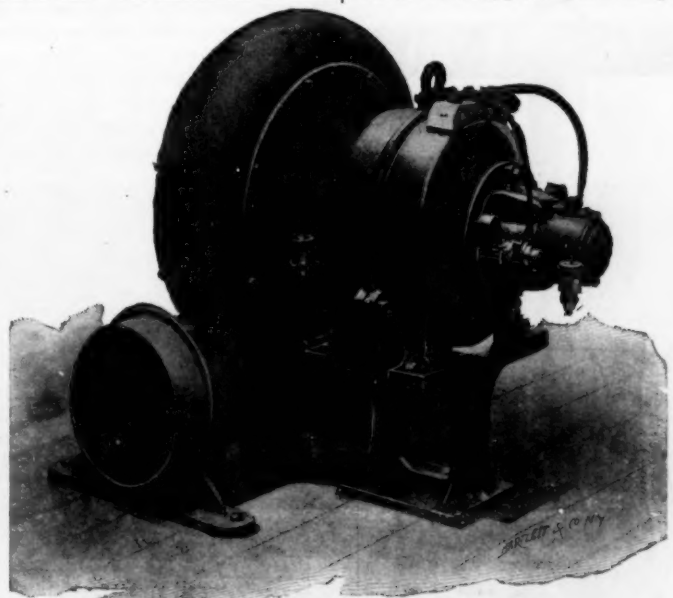
Surface Grinding Machine.

The small surface grinding machine, with head attachment for longitudinal



SURFACE GRINDING MACHINE.

and cross feed, illustrated, is useful for finishing a large variety of flat pieces, such as blanking, piercing and stamp dies,



DIRECT-CONNECTED ELECTRIC EXHAUSTER.

blades, as well as the inlet and discharge openings, have been proportioned, after careful experimenting, so as to afford maximum efficiency. The air enters the fan in a direction parallel to the shaft, passes outward along the blades with an increasing acceleration due to the centrifugal force, and is discharged radially from the tips with a velocity substantially equal to the peripheral velocity of the wheel. The pressure developed by a given fan varies

punches, rivet machine tools and similar work. The spindle has two wheels, and as the second is provided with a rest, the machine is also adapted for grinding the tools and small pieces upon which an ordinary grinder is used. The table has a T slot, and is moved longitudinally by a hand lever and transversely by a hand-wheel; it slides upon guides on the large plate, which has a hinge on one end and an adjusting screw on the opposite end.

By this arrangement a close adjustment may be obtained through one and one-half inches. The bracket has a vertical adjustment of ten inches, allowing the table to be raised within two and one-half inches from the center of the spindle, and as the bracket is counterbalanced, it can be easily raised or lowered.

The spindle is made of steel, and runs in anti-friction metal bearings, which are dustproof. A statement of the dimensions and other details can be obtained from the maker, the Diamond Machine Co., Providence, R. I.

Low-Water Alarm and Blow-Off Valve.

Steam-power users should be interested in the accompanying illustration.

The Crane low-water alarm as originally made has been modified because of

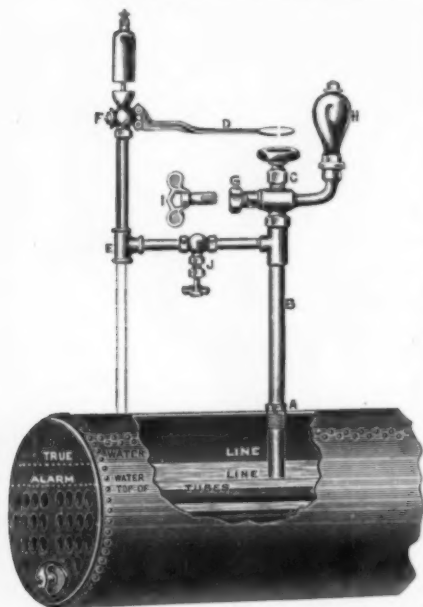


FIG. 1-CRANE LOW-WATER ALARM.

the law in some States stipulating that low-water alarms should be of a type capable of being tested by the inspector of workshops and factories. It was necessary, therefore, that an additional valve with pipe fittings be used. The Crane

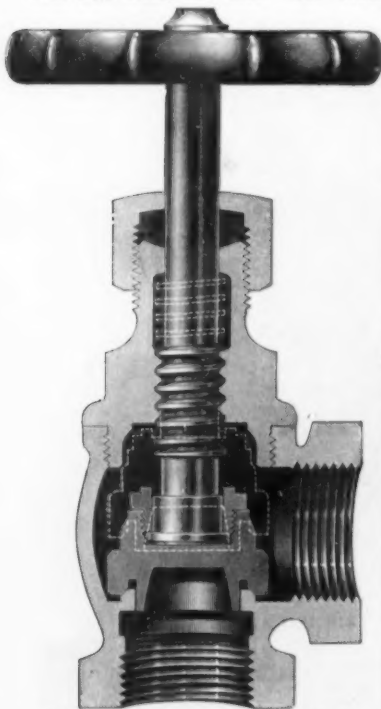
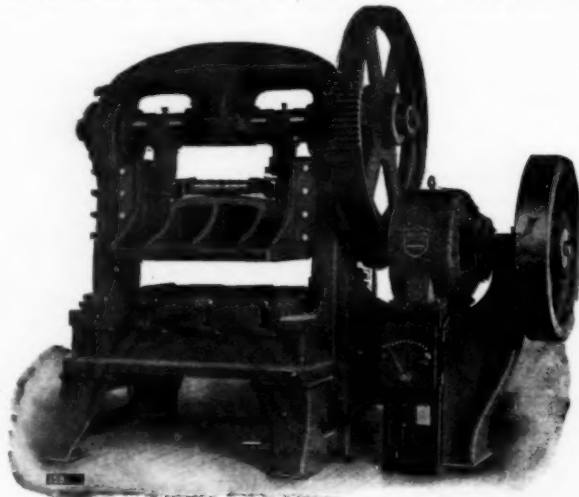


FIG. 2-CRANE BLOW-OFF VALVE.

patent low-water alarm can be attached directly on top of the boiler or can be piped to any position most convenient to the engineer. Fusible gaskets are furnished that melt at 270 degrees. Fig. 1 shows how the device is attached. A hole is drilled and tapped in the top of the

boiler, of the same size as the bushing A. A short piece of pipe is screwed inside the bushing, this being long enough to reach within two inches of the top boiler tubes. The tee E is connected by a pipe to any



ELECTRICALLY-DRIVEN BLANKING PRESS.

suitable place in the boiler producing live steam.

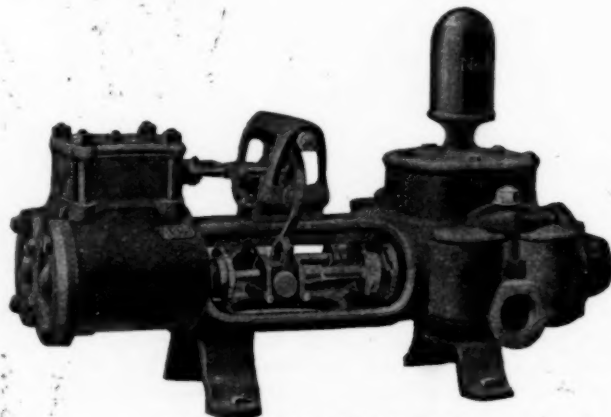
As long as the water does not go below the low-water line, the water in the tube B prevents the steam from reaching the fusible plug. The moment the water falls below the low-water line the steam will rush in and fuse the plug C, thereby allowing the steam to escape through the hole in the wheel, which raises the lever D, opening the valve in the whistle F, thereby allowing the steam in the pipe E to give the alarm. To renew the fusible plug, close the valve G, unscrew the nut C and insert a new gasket. Then replace the nut C, allowing the pipe B to cool before opening the valve G. Then remove the key I, which indicates that valve G is open and ready for operation again.

The blow-off valve, shown in Fig. 2, was designed to overcome the trouble generally experienced with the ordinary valves and cocks used for this purpose. The valve-seat is on the outside, which prevents sediment lodging at this point. The projection on the under part of the disc prevents any discharge taking place until the seats have become widely separated. This prevents wire drawing. It is necessary that the valve should always be connected from the pressure side. They can be made in either angle or globe pat-

The motor occupies no more room than the driving pulley of a belt-driven machine, is series wound, operated at 240 revolutions per minute, and at this speed develops four horse-power. The main

switch, fuse-box and rheostat, as shown, are mounted upon a board fastened to the motor support.

The machine is compact and powerful, and, being electrically equipped, may be



CANTON DUPLEX STEAM PUMP.

set upon the shop floor without regard to line shafting, a feature that makes it possible to greatly economize in floor space.

The motor is described by its manufacturer, the Bullock Electric Manufacturing Co., Cincinnati, Ohio, in Bulletin 35.



EXTERIOR VIEW OF THE LUNKENHEIMER COMPANY'S MACHINE SHOP.

terns, and the angle pattern is always furnished unless otherwise ordered. These devices are made by the Crane Company of Chicago.

Electrically-Driven Blanking Press.

A punch direct driven by a Bullock motor No. N-136 is illustrated herewith.

Lunkenheimer Co.'s Machine Shop.

The increasing demand for Lunkenheimer steam specialties and other product last year proved the necessity for largely-increased facilities for manufacturing them. Accordingly, extensive improvements were planned and effected by the Lunkenheimer Company at Cincin-

nati. The new machine-shop building is of interest. It is 90x170 feet in size, two stories and basement, gallery style of construction, is lighted by electricity and furnished with power by a 100-horse-power engine. The exterior is of pressed brick, an idea of its appearance being shown by the accompanying illustration. The machinery equipment is of the latest improved types used in the manufacture of iron valves, injectors and safety valves, to produce which the shop was especially planned. The machinery includes a traveling crane thirty feet wide running the length of the building, leaving galleries on the second floor on both sides thirty feet wide; its construction is of steel, and designed to carry safely 300 pounds per square foot. The steam plant consists of a 125-horse-power special Babcock & Wilcox boiler, built for a safe working pressure of 400 pounds to the square inch; in connection there are appliances for testing all goods under steam, air and hydraulic pressure.

The shipping facilities of the new plant are ample, and it increases the company's production about 25 per cent., adding 100 men to the 400 that had been enrolled previously.

Lunkenheimer product is strictly high grade in all the departments for brass and iron goods and engineering appliances.

Canton Duplex Steam Pump.

The accompanying illustration shows a duplex boiler-feed pump manufactured by the Canton Pump Co., Canton, Ohio, known as the No. 5, and made in seventeen sizes, with the water pistons ranging in size from one and one-eighth to eight inches in diameter.

These pumps are of the inside-plunger design, packed with soft, fibrous packing, which is not dragged back and forth with the plunger, but remains stationary, the same as the packing in an ordinary piston-rod gland. This feature is of special advantage when handling bad or gritty water, and, in fact, under any conditions, as the packing can always be kept tight. It is accessible by simply removing the outer pump barrel head, the removal of the plunger being unnecessary either for tightening the packing or for its renewal. The feature of accessibility holds throughout, the suction valves as well as all other interior parts being easily reached whenever necessary. This is of prime importance, especially on a boiler feeder which must be readily repaired by the engineer in charge.

The plunger and piston rods are connected together in the center by a compression coupling, which enables the use of brass rods on the water end and steel rods on the steam end, either being replaced or repaired without removing the other. The smaller sizes of pumps are made with soft steel packing rings in the steam cylinder instead of cast iron. The

steel rings, being soft, are said not to wear the cylinder as rapidly as the cast iron, and are not as likely to break. The lever movement is adjustable by the use of hardened cone bearings, and all lost mo-

Our illustrations show the coal dock with the conveyor structure in place and the interior of one of the conveyors in operation, but only partially loaded.

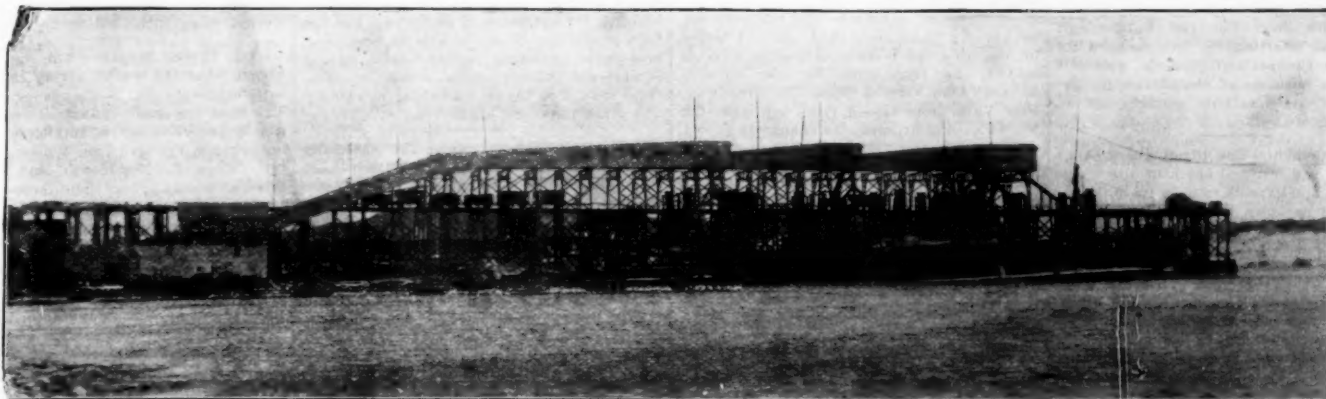
The total cost of loading the coal by this

Ludlow-Saylor Works.

The factory buildings of the Ludlow-Saylor Wire Co. at St. Louis, illustration accompanying, cover not only the ware-

basement, with auxiliary buildings, is used for the manufacture of wire cloth, which covers a range from fly screen to the heaviest mining grades.

The "Perfect" Double Crimped Cloth



LARGEST COAL CONVEYOR AND FIRST COAL DOCK EQUIPPED WITH BELT CONVEYORS.

tion is obviated by simply drawing up its bearings.

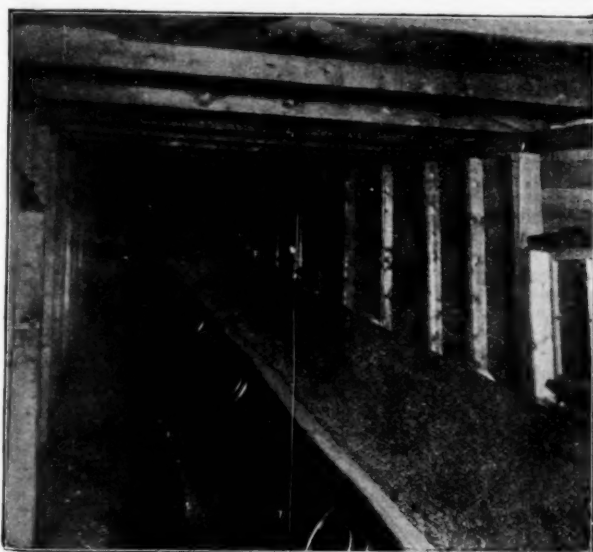
Every pump is thoroughly tested at various speeds and pressures before leaving the factory, and is fully guaranteed to operate satisfactorily under all ordinary conditions of boiler service, with either hot or cold water, and under any pressure up to 150 pounds per square inch.

The company also manufactures acid, brewery, brine, elevator, fire, sewage, mine, tannery, vacuum and special pumps.

The Largest Coal Conveyor.

The improvements on the large coal dock of the Dominion Coal Co. at Cape Breton have been completed, and the conveyors are in operation. The loading was formerly accomplished by railroad cars operated on a two-level system of standard-gauge double track, the cars being lowered after emptying on the upper level by means of a droptable. After being lowered the cars returned by gravity incline to the inshore end of the dock. This system worked admirably, and gave rapid dispatch to vessels in loading when there was a full supply of coal in the cars; but this is stated to be the most expensive form of storage known. After rejecting, on account of expense, a scheme of placing a pocket above the pier, the question was referred to the Robins Conveying Belt Co., 13 Park Row, New York. This company designed and installed the present equipment, consisting of a storage of 10,000 tons in bins under the railroad at the inshore end of the dock and mechanical means for carrying the coal from the storage and delivering it simultaneously into three or four hatches of a steam collier lying alongside the dock. This is accomplished by means of two belt conveyors of large size, the first of which runs through a tunnel under the storage bins, then rises to a height of about twenty-five feet, at which point it delivers its load to the second conveyor, which elevates the coal an additional height of thirty-five feet to a point thirty feet above the track level of the dock. At this height it is carried the entire length of the dock with unloading devices at three or four points, by means of which a part of the coal on the belt can be deflected into chutes which run down to the collier's hatches.

The scope of the operation is only appreciated when it is explained that the regular working capacity of the conveyors is 750 tons per hour, and that this quantity of coal can be carried a distance of 1000 feet and delivered into a vessel without interfering in any way whatever with the former car system, which can be operated at the same time if desired.



INTERIOR OF CONVEYOR IN OPERATION.

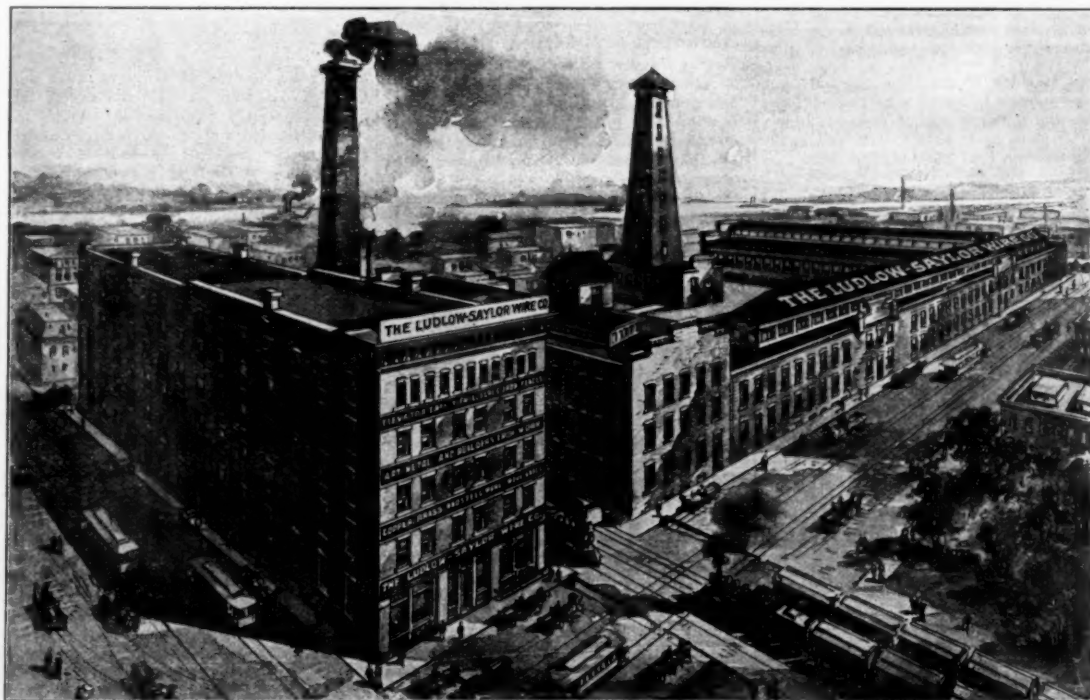
system, including interest and depreciation, power and labor, is said to be considerably less than one-quarter of a cent per ton.

houses, where is carried a large stock of staple goods, but also the factory buildings, devoted to the manufacture of wire cloth, wire work, ornamental metal work,

made by this company is said to be a marvel in its regularity of mesh as well as its strength. Mining companies who use it are convinced of its superior qualities, as it is exceptionally durable and retains so perfectly the opening so essential for the screening of ores. Further information can be obtained from the company.

Important Patent Suit Ended.

A decision was rendered on January 15 in the United States Circuit Court for the Eastern District of Pennsylvania by Judge Dallas in the suit brought by Edward R. Branson and the Branson Machine Co. in 1898 against the Boss Knitting Machine Co., the Excelsior Knitting Machine Co. and Paxton & O'Neill, for alleged infringement of the patent for improvement in knitting machines, granted to E. R. Branson in 1885. The result of the protracted trial is the decision, that concludes as follows: "I am of the opinion that the charge of infringement has not been sustained, and therefore the bill will be dismissed, with costs." As this case was regarded as a test suit, the decision is held to relieve users of the Boss, the Excelsior and the Paxton & O'Neill machines from a threat of a demand for



WORKS OF THE LUDLOW-SAYLOR WIRE CO., ST. LOUIS, MO.

It is also stated this is the largest coal conveyor in the world, and the dock the first one for coal ever equipped with belt conveyors.

railings, wrought-iron fences and similar product.

The most recent improvement, a building 175x75 feet, three stories and finished

settlement of damages and royalties against users of machines in which the needles are actuated by pickers working on the needle butts.

TRADE NOTES.

Factory Sale.—An excellent factory property is offered for sale at an exceptionally low price, its location being Batavia, Ill. Address for particulars Wm. A. Bond & Co., 115 Dearborn street, Chicago.

Cumberland Steel Co.—The Cumberland Iron & Steel Shaffing Co. has changed its name to the Cumberland Steel Co., and will continue its business of manufacturing the product indicated by title. Offices are at Cumberland, Md.

Portland Cement.—The Birmingham (Ala.) Cement Co. has resumed operations to a certain extent, and expects to have its mill running to full capacity within a week. This company's Portland cement is destined to be used extensively not only in the South, but in other sections.

Large Mill Contract.—Contract for equipping with machinery a \$300,000 saw-mill in Houston county, Texas, has been awarded to the Filer & Stowell Co., Milwaukee, Wis. This representative concern continues to dispose of its milling equipments to the most discerning buyers in the lumber industry.

Planer-Machinery Order.—The order to supply planer machinery for a \$300,000 mill in Houston county, Texas, has been given to the Berlin Machine Works, Beloit, Wis. This establishment is famous for its specialties, and supplies its planing machinery to the most exacting purchasers in the lumber trades.

Wants Coal and Timber Lands.—As an investment for foreign clients an attorney desires to purchase large boundary of coal and timber lands in Tennessee, Kentucky or the Virginias; also wants colliery in operation. Full particulars should be communicated by owners to "Attorney," Box 115, Washington, D. C.

Henry Adams, Engineer.—The removal of offices from 726 Equitable Building to 1229-1233 Calvert Building is announced by Henry Adams, consulting engineer, Baltimore, Md. Mr. Adams is prepared to execute promptly and with satisfaction to patrons engineering work in heating, ventilating, general mechanics, etc.

Cash Bonus of \$100,000.—This is the offering for cotton factories or other important industries in a populous Texas region in the cotton belt, where ample fuel, water and labor can be obtained at minimum cost. Or a fourth interest in \$2,000,000 capital will be taken. Address S. G. Fullerson, Carrollton, Texas, for particulars.

Cotton-Mill Sale.—Investors desirous of engaging in the textile industry may be interested to know that the Dardanelle (Ark.) Cotton Mills is for sale or lease. This 3000-spindle plant is well adapted for producing twines and hosiery yarns. It is located in cotton section, and has the other requisite advantages for profitable operation.

Plans Machine Works.—The extensive improvements now being made by the Southern Engine and Boiler Works at Jackson, Tenn., are after plans by F. Felkel, C. E. and architect, Pittsburg, Pa. The plant includes machine shop, foundry, woodworking and pattern shop, pattern storage, boiler-house, engine-room, blacksmith shop and alteration of boiler shop.

Graphite Products.—Graphite products are extensively used in the industrial world, and their manufacturers enjoy a constantly-increasing demand. An exceptionally successful concern in this line is the Detroit (Mich.) Graphite Manufacturing Co., its American business being very large. Its export business is also on the increase, a large order from Mexico being its latest.

Wm. S. Haines Co.—That boiler perhaps is being crowded to its utmost, and still its owner is short of steam and power. A short cut to steam and heat increase, not to mention saving in fuel, is accomplished by the use of the Heintz Steam Trap. The Wm. S. Haines Co., Philadelphia, manufactures it, and users all over the world attest to its efficiency. This company has just removed its offices and factory to more commodious facilities at Eighteenth and Hamilton streets.

To Export Machinery.—The American Machinery & Export Co., recently incorporated in New Jersey, with capital of \$250,000, has established an office at 15 Cortlandt street, New York city. The company will deal in all kinds of machinery, principally for export, and will make a specialty of buying for foreign railroads. Wesley Meeter, for some time purchasing agent of the Jackson &

Sharp Co. at Wilmington, Del., is vice-president and general manager.

Roofing Slate.—Buyers of roofing slate may be interested to know that prominent manufacturers and dealers consider there will be more stability to prices this year than for several years past. This will be to the buyer's special advantage and mutually advantageous to all concerned. Recent action by the different makers of roofing slate is said to be responsible for the outlook. Messrs. John Galt & Sons, 253 Broadway, New York, have issued their new price-list No. 80, calling attention to change in prices.

O. A. Robbins, Successor.—Mr. O. A. Robbins has acquired the interest and good-will of J. L. Sexton in the Sexton & Robbins Co. at Charlotte, N. C., and will continue the machinery business heretofore conducted. Mr. Robbins is thoroughly versed in his chosen specialty, and prepared to furnish the most improved textile equipments built. The manufacturers for whom he is selling agent include the most prominent in England and America. The Sexton & Robbins Co. supplied machinery for a number of the new Southern cotton mills.

Sterling Dust-Collecting System.—Manufacturers who use machinery that produces sawdust and kindred refuse material should be especially interested in the Sterling Dust-Collecting System. Some of the most noted manufacturers have installed this system with great satisfaction and profit, and their repeat orders attest their confidence in the equipment. The Sterling Blower & Pipe Manufacturing Co., Hartford, Conn., designs and constructs the system noted. Its latest repeat order just came in from the Allegheny Company, Bethlehem, N. C.

Dodge Enlarging.—The increase of demand for transmission machinery built by the Dodge Manufacturing Co., Mishawaka, Ind., is causing that concern to enlarge its plant. The machine shop and foundry will be extended, the two buildings to be each 125x200 feet, constructed of steel. The new machinery will include two 35-ton electric traveling cranes, heating apparatus, sprinkler equipment, two-inch cupola and 150-kilowatt generator and engine; also will increase the main driving power by a 28x48 Corliss engine. Bids for the construction and equipment are now being considered.

Education by Correspondence.—Education by correspondence is a trend of the times that enables workers in different spheres of life to improve their knowledge during idle hours. Such improvement naturally betters opportunities for advancement in various branches. Thousands of students are enrolled in this movement for education at home, and many have profited by its advantages. Both those seeking positions and those seeking employees utilize such institutions as are educating students at home. Prominent among these institutions is the International Correspondence Schools, Scranton, Pa.

Saving Waste Oil.—Users of lubricating oils are well aware that a large portion of the oil used on machinery is not entirely consumed. But for the fact that the oil after passing through the machinery is gritty and dirty, it could be reused a number of times. Oil filters have been introduced in order to enable oil users to effect the possible economy indicated. The lubricating properties remain after the impurities are eliminated, and this latter is what the oil filter does. The Cross Oil Filter has been prominent for its success, and the most prominent large industrial concerns of the country are using it. It is made by the Burt Manufacturing Co., Akron, Ohio. The Calumet (Mich.) & Hecla Mining Co. is using seven of these filters.

Concerning Ice Machinery.—An important question when building industrial plants is the selection of the type of machinery required. Different makes of machinery bring different results, and those equipments that, speaking broadly, best tend to afford efficiency and durability are those sought after. Ice and refrigerating equipments are important in their class, and the York (Pa.) Manufacturing Co. has been especially successful in constructing them. The company's most recent contracts aggregate a tonnage of over 300 for ice factories and of over 315 for refrigerating plants. These shipments went to all parts of the United States for breweries, meathouses, fish-curing plants, packers, refrigerating and ice plants proper, and many others.

Du Bois Enlarges.—An increasing demand for any product may justly be taken as an evidence that the product is giving its users thorough satisfaction. Such increasing de-

mand entails enlargements and improvements in factories. The Du Bois (Pa.) Iron Works is experiencing such a demand, and its plant has been considerably enlarged and improved recently in order to keep up with orders. Hydraulic riveters, lathes, planers, drill presses and many other modern machines have been installed and the premises bettered for extension of facilities. The Du Bois production of machinery is most comprehensive, including tubular boilers, mining equipments, tannery outfits, saw-mills, structural iron, iron tanks, conveying machinery and other improved apparatus.

McKelvey Concrete Mixer.—The increasing use of Portland cement concrete has created a demand for a better system of mixing than the hand-shovel method. The superiority of machine mixing is well understood, yet the heavy, cumbersome and high-priced mixers frequently prove to be impracticable. To meet the requirements of the contractor in this regard there has been designed by the Garden City Sand Co. of Chicago (office, Security Building) a small portable man-power mixer, which is light in weight, readily wheeled, and can be operated by four laborers. It is claimed this apparatus will produce nearly twice as much concrete as the same force of men can mix without it, and it will be done 20 per cent. more thoroughly, as the concrete materials cannot pass through the drum without being thoroughly mixed. Inquiries are solicited.

Star Portland Cement.—A perfect cement for engineers is that which is always uniform and is of the highest grade demanded for important work. Such a product the Bonnevill Portland Cement Co., Siegfried, Pa., states it offers in the Star Portland Cement, which has been used extensively on concrete reservoirs at Washington, new Charlestown bridge at Boston, new filtration plant at Philadelphia, Charlestown (Mass.) navy-yard, and on other work of the highest grade in the large cities. The Bonnevill company has general office at 1307 Real Estate Trust Building, Philadelphia. Its mills were established in 1868, and their present capacity is over 1500 barrels of cement daily. Buyers are invited to request estimates. A vest-pocket five-foot tape measure in circular case is being distributed to those who are desirous of keeping in mind this company's product. Standard Portland and Improved Rosendale are also cements of this company's make.

Towing Possibilities.—A towline is subject to immense strain during heavy seas. To obviate this, modern invention has produced the steam towing machine, which absolutely limits the strain on a towing hawser to prevent parting. Not only small craft, but dry-docks, battleships and others can utilize the machine. Its distinctive feature is its driving and cushioning steam cylinders, which provide an elastic steam cushion and automatic relief on the hawser, without which the latter would be continually straining and frequently breaking. A manila hawser, although more elastic than steel, is very bulky to handle or stow on a barge, and expensive on account of ordinary wear and tear. A steel-wire hawser will last for an indefinite time. The towing machine is adapted for ocean steamers, as better assistance can be rendered to disabled vessels than can be offered by any other means. The salvage gained in saving one ship would repay many times the price of the machine. Those interested in this subject are invited to address the maker of the Shaw & Spiegle Patent Automatic Steam Towing Machine, the American Ship Windlass Co., Providence, R. I. This company claims that never in a single instance has a hawser parted in towing with its machine, unless the vessel got aground or came in collision.

TRADE LITERATURE.

Atkins Saw Calendar.—One of the novelties in calendars for this year is issued by E. C. Atkins & Co., Indianapolis, Ind., manufacturers of saws. The card on which date pad appears represents a log of wood through which a circular saw is cutting its way.

Myers Goods.—Some new circulars of Myers goods have been issued. Those who will be interested in them are users of spray and power pumps, haying tools, store ladders, gate hangers, door hangers, etc. Address Messrs. F. E. Myers & Bro., Ashland, Ohio.

Farmers' Plows.—Farmers and others having agricultural interests should be interested in the new advertising sheets of the Butcher & Gibbs Plow Co., Canton, Ohio. This make of plows has been in use seventy-one years—in itself a great tribute to the plow's merits.

"Draft Without a Chimney."—Such is the title of an interesting booklet of which the fourth edition has just been issued by the B. F. Sturtevant Co., Boston. This brings the total number of copies printed up to 50,000. The booklet relates to the experience of the Sturtevant Company in the use of a fan to produce draft without a chimney in its own works. Copy furnished on application.

I-T-E Circuit-Breaker.—This device is in use all over the world, giving the greatest satisfaction to its thousands of operators. The most important industrial concerns testify to the efficiency of this circuit-breaker, notably the Pencoyd Iron Works. The Cutter Company, Nineteenth and Hamilton streets, Philadelphia, manufacturer of the I-T-E circuit-breaker, has issued a calendar relative to the device.

Rope and Twines.—Manufacturers and other industrial operators who make use of rope and twine will be interested in knowing that the American Manufacturing Co., 63 Wall street, New York, has issued, under date of January 24, prices on its product. "American" transmission rope, plumbago-heart hoisting ropes, finished India twines, jute, rope and jute baling and bundling cords; also oil-well cordage, towing lines and ships' hawsers are among the American company products.

Sawyers' Handbook.—This publication is of especial interest to operators of lumber mills. It contains a treatise on the care of saws and saw tools which will be of value to sawyers and fliers. General lumber and mill men will also find the booklet valuable. E. C. Atkins & Co., Indianapolis, issue this booklet, its contents including reference to the high-quality saws and tools manufactured by this corporation. Atkins' product of this character is so well known throughout the world that lengthy dissertation is unnecessary.

About Steam Turbines.—All who are interested in steam engineering will be pleased to know that there has been reprinted in pamphlet form the treatise on steam turbines published in the proceedings of the Engineers' Society of Western Pennsylvania last November. Various drawings and photographs are reproduced, to the great enhancement of the facts related by Francis Hodgkinson, author of the treatise. Copies of "Steam Turbines, With Special Reference to the Westinghouse-Parson Steam Turbines," may be obtained by addressing the Westinghouse Companies' publishing department, Pittsburg, Pa.

Stop-Cocks and Kindred Specialties.—Although small in size, the importance of stop-cocks and kindred specialties is such as to necessitate in their productions the services of thorough and experienced manufacturers. Stop-cocks for steam, gas, water, oil, etc.; malleable-iron bronze-seat ground-joint union couplings, plain and galvanized; gas-fixture appliances and numerous other articles are included in the specialties mentioned. The E. M. Dart Manufacturing Co., of 136 Clifford street, Providence, R. I. has been engaged in this branch of manufacture since 1865, and its product of patented specialties is well and favorably known. The 1901 catalogue of Dart goods is now ready for distribution.

Blakeslee Machinery.—Prominent among the machinery builders of the South is the Blakeslee Manufacturing Co., Birmingham, Ala. This company offers its gas and gasoline engines, pumping outfits for mines and other equipment, new circulars relative to them having just been issued. The engines are made in different sizes. The one and one-half and three horse-power are especially recommended for operating printing shops, small electric-light plants and other light machinery, also for farm use in running churns and corn shellers, pumping water, etc. Other sizes are made for any purpose requiring power, including marine work. Send for particulars, especially of the Blakeslee mining improvements.

Selden Patent Packings.—This product has attained an extensive usage among up-to-date buyers in this line. These packings have stood the test of time in mines, mills, ice plants and the various other branches in which their utilization is demanded. Randolph Brandt, 38 Cortlandt street, New York, supplies these specialties, also gaskets, pump valves, hose, belting and supplies generally. Mr. Brandt has issued a memorandum tablet, with calendar, for the use of his customers, both present and prospective. The booklet is enclosed in a tasteful colored cover, illustrated in the classic style; its contents include interesting and convenient information. Mr. Brandt received bronze medal from Paris Exposition for his product.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

ALABAMA.

Anniston—Box Factory.—Algier & Smith will manufacture boxes for shipping yarns.

Bessemer—Coal Mines.—T. H. Aldrich and associates have purchased several thousand acres of coal lands near Bessemer from Dr. Frank Prince and others, and will open mines.

Birmingham—Coal Mines.—The Little Cahaba Coal Co. has been incorporated, with capital stock of \$50,000, and Henry F. De Bardeleben, president; William Plinkard, vice-president and treasurer, and William A. Jackson, secretary; company has purchased coal land near Blocton, and will open slope at once. It is reported that the above company will consolidate with the Reynolds interests (managed by Jesse W. Wadsworth), giving a combined capital of \$100,000 and a daily output of 2500 tons of coal.

Birmingham—Foundry and Machine Shops. The Hardie-Tynes Foundry & Machine Co. will rebuild its \$75,000 plant, reported burned.

Birmingham—Chemical Works.—The Grasselli Chemical Co., Daniel Bailey, secretary, Cleveland, Ohio, will, it is reported, duplicate its extensive works at Grasselli, near Birmingham.

Birmingham—Brick Works.—A company will be organized, with capital stock of \$30,000, for establishment of brick works. Address "Secretary Commercial Club."

Birmingham—Coal Mines, etc.—The Galloway Coal Co. of Memphis, Tenn., lately reported, states that it will open new mines in Walker county, also in Bibb county, Alabama, and that coke ovens will probably follow later on; R. Galloway, president.*

Cullman—Handle Factory.—Gelsen Bros. of Crown Point, Ind., have established a factory at Cullman with daily capacity of 200 dozen handles.

Cullman—Pickle Works.—The Heinz Pickle Co. of Pittsburgh, Pa., is reported as investigating with a view to establishing works at Cullman. William Richard at Cullman is said to have the project in charge.

Montgomery—Saw, Planing and Shingle Mill. Capt. H. L. Wood and associates will organize the H. L. Wood Lumber Co. to erect saw-mill with capacity of 25,000 feet, planing mill of 10,000 feet capacity and shingle mill of 50,000 feet capacity.

Jenifer—Furnace.—The Jenifer Furnace Co., W. H. Weller, president and treasurer, will change its charcoal furnace to coke furnace of 125 tons capacity, as lately reported.

Mobile—Brewery.—The Blenville Brewery Co. has been incorporated, with James McDonnell, president; J. B. Webster, general manager, and G. E. Aunsbaugh, secretary and treasurer, for the establishment of brewery with capacity of 40,000 barrels per year; capital stock \$100,000.

Mobile—Brewery.—It is reported that Chicago parties will organize a \$250,000 company for the establishment of a brewery in Mobile. Among those interested are mentioned August Roebels and Charles Brinkmeyer.

Mobile—Pulp-plaster Factory.—The Alabama Pulp Plaster Co. has been organized to establish a pulp-plaster factory. Names of those interested will be announced later.

Raleigh—Grist Mill.—T. C. Dennis is erecting grist mill.

Tuscaloosa—Ochre Deposits.—Lee Myer has discovered and will develop ochre deposits.

Wiltonville—Hosiery Mill.—Justin C. Jackson will establish a \$7000 hosiery mill.

ARKANSAS.

Camden—Machinery.—Chartered: The Camden Machinery & Supply Co., with capital of \$50,000, by C. C. Rose, president; J. R. McCaughey, C. B. Benson and others.

Junction—Stove Company.—The Conle Stove Co. has been incorporated, with capital stock of \$20,000, by J. D. Proctor, president; Thomas Robertson, vice-president, and R. G. Brown, secretary and treasurer.

Little Rock—Engine Company.—J. C. Womble, N. J. Verrett, C. H. Ross and H. N. Samstag have incorporated the Verrett Shaft Engine Co., with a capital stock of \$100,000.

Little Rock—Iron Works.—J. A. Comer claims that he is negotiating with Pittsburg (Pa.) parties looking to the establishment of extensive machine shops and iron works in Little Rock. Company will, it is said, be known as the Arkansas Steel, Car, Tube & Locomotive Co., with capital stock of \$800,000.

Monette—Mercantile.—The Monette Mercantile Co., with capital stock of \$10,000, has been chartered by M. A. Isaacs (president) and others.

Paris.—Chartered: The Titsworth-Blair Company, with capital stock of \$18,000, by E. N. Titsworth, president; M. P. Blair, R. B. Sheehan and others.

FLORIDA.

Citronelle—Fiber Factory.—Charpia & Parkerson have established and put in operation a fiber factory.

Jacksonville—Telephone Improvement.—The Southern Bell Telephone Co., W. T. Gentry, Atlanta, Ga., Southern superintendent, will make extensive improvements to its system in Jacksonville, including putting wires underground and erecting three-story brick building for exchange.

Pensacola—Bottling.—J. E. Taylor, W. R. Taylor, J. R. Keller and others have incorporated the Hygeia Bottling Co., with capital stock of \$10,000, for manufacture of soda water, ginger ale, etc.

Windsor—Clay Deposits.—J. L. Kelly is having clay lands tested and will install machinery for working if clay is proven satisfactory.

GEORGIA.

Adairsville—Telephone System and Water-works.—The construction of water-works and telephone systems is talked of. Address "The Mayor."

Athens—Sash, Door and Blind Factory.—Pledger & Vonder Lieth will establish sash, door and blind factory, as reported lately; building will be 40x80 feet.*

Cartersville—Grist Mill.—The Etowah Milling Co., reported recently as incorporated, is erecting grist mill with capacity of 4000 bushels of corn per day.

Cedartown—Supply Company.—C. A. Wood, J. H. Phillips, D. N. Hampton and J. T. Bright have incorporated the Cedartown Supply Co., with capital stock of \$8000, to conduct general supply business.

Cedartown—Cotton Mill.—The Adamson Mill Co. will be organized to erect the \$100,000 cotton factory reported last week as proposed by Charles Adamson and associates; will build for 10,000 spindles, starting operations with 4000 spindles, with dye-house. Charles Adamson of Cedartown and Philadelphia, Pa.; Franklin Baker, Jr., of Philadelphia and Edmond Alston of New York will be interested. Address correspondence to Mr. Adamson at 119 South Fourth street, Philadelphia.

Clarksville—Cotton Mill.—Philadelphia (Pa.) parties have made a proposition to establish a 5000-spindle cotton mill at Clarksville. J. H. Hicks can inform.

Clarksville—Toy Factory.—M. S. Squiers of Binghamton, N. Y.; F. W. Crandall and J. W. Beard of Elkland, Pa., and M. H. Colby of New York have purchased timber lands in Northern Georgia, and will make extensive improvements, including the construction of a railroad and erection of large toy-manufacturing plant.

Elberton—Furniture Factory.—I. C. Van Duzer and W. N. Auld have had plans made for erection of furniture factory.

Gainesville—Cotton Mill.—The Vesta Cotton Mills of Charleston, S. C., will increase capital stock from \$250,000 to \$500,000 and remove its plant to Gainesville. New buildings will be erected and the equipment of 28,000 spindles and 740 looms installed. Lockwood, Greene & Co. of Boston will prepare the plans; John H. Montgomery, president.

Griffin—Dye Plant.—The Griffin Knitting Mills will add dye plant to its knitting mill; E. H. Spivey, secretary.*

Macon—Cotton Mill.—The Payne Cotton Mills has obtained privilege to bond for \$100,000 for improvements.

Macon—Shoe Factory.—The Strong Shoe Co. has been incorporated, with capital stock of \$10,000, by Stuart Watson, Paul H. Watson, J. C. Kimme and G. H. Tharpe.

Monroe—Cotton Mill.—The Walton Cotton Mill Co. will consider increasing its capital stock from \$75,000 to \$100,000 for enlarging mill to 10,000 spindles.

Rome—Bottling Works.—The Rome Coca-Cola Bottling Co. has been incorporated for manufacturing and bottling coca-cola, soda waters, etc., with capital of \$1250, and privilege of increasing to \$5000, by I. B. Whitehead and M. L. Barron.

Rome—Scale and Truck Factory.—The Standard Scale Co. is making improvements to its plant to double capacity; improvements include installation of additional tower for melting iron with capacity of 6000 pounds per day, doubling foundry department, etc.

Sandersville—Electric-light Plant.—Efforts are being made for the establishment of electric-light plant. Address C. B. Hendrix.*

Savannah—Bridge.—It is reported that the Seaboard Air Line, John Skelton Williams of Richmond, Va., president, is considering the construction of an electric drawbridge across the river at Savannah to cost \$100,000 for connecting the terminals on Hutchinson's Island with the city.

Savannah—Land and Naval Stores.—W. C. Powell, W. W. Beach, Alexander Sessoms, B. F. Bullard and others have incorporated the Sessoms Land Co., with capital stock of \$50,000, and privilege of increasing to \$500,000, for the purpose of dealing in real estate, manufacturing naval stores, lumber, etc., mining phosphate, etc.

Toccoa—Granite Quarry.—W. B. Troy, Balfour, N. C., will open new granite quarry near Toccoa.

Waycross—Shingle Mill.—D. J. Blackburn of Needham and W. B. Folks of Waycross will establish mill for manufacturing pine and cypress shingles.

Winder—Corn and Flour Mill.—John S. Smith, G. W. Smith and R. L. Carithers have organized a \$10,000 company for establishment of an 80-barrel roller flour mill and a 300-bushel corn mill.

Winder—Telephone System.—The Winder Telephone Co. has been organized, with capital stock of \$5000; R. B. Russell is president. System will be constructed.

Winder—Electric-light Plant.—The Winder Knitting Mill Co. will install an electric-light plant.

KENTUCKY.

Bowling Green—Electric Plant, etc.—The city contemplates granting franchise for electric-light works, street-car lines and for conveying water heated by steam for warming buildings, etc. Information can be had from M. H. Crump, secretary Commercial Club.

Clinton—Flour Mill and Grain Elevator.—John E. Jackson and C. H. Beshers will erect 150-barrel flour mill and 25,000-bushel grain elevator, as lately reported; will operate as Beshers & Jackson.

Louisville—Telephone System.—E. M. Coleman has purchased telephone franchise, and will organize company for construction of a system.

Middlesborough—Coal Mines.—The Excelsior Coal Mining Co. (lately reported) states that it expects to make new openings in the near future to make its capacity about 10,000 tons per month.

Owensboro—Coal and Mineral Lands.—Hugh A. Williams, W. Scott Morrison and H. W. Baker have incorporated, with capital stock of \$5000, the Owensboro Coal & Mineral Co. for purchasing and developing coal and mineral lands, construction of necessary railways, etc. Address H. A. Williams, president.*

Williamsburg—Water-works.—Dr. E. S. Moss may be addressed regarding the water-works lately mentioned.

LOUISIANA.

Lake Providence—Electric-light Plant and Water-works.—The city will build, as reported lately, an electric-light plant and water-works to cost \$17,500. Plans and specifications have been prepared, and bids will be opened in February; G. M. Franklin, mayor.*

Minden—Ice Plant.—The Minden Cotton Oil & Ice Co. will erect a 15-ton ice plant; machinery contracted for.

Napoleonville—Electric-light Plant and Water-works.—The city will vote February 12 on levying a tax for constructing water-works and electric-light plant. Address "The Mayor."

New Orleans—Mineral-water Company.—W. W. Weiss, Joseph A. Zimmerman, W. F. Fugler, J. T. Bath and others have incorporated the Acid Iron Mineral Water Co., Limited, with capital stock of \$10,000, to deal in and distribute acid iron mineral waters.

New Orleans—Elevator, etc.—It is said that the Texas & Pacific Railway will commence work on its 1,000,000-bushel grain elevator at Westwego (reported recently) about the middle of August, and will extend its wharfage front about 500 feet; L. S. Thorne, general manager, Dallas, Texas.

New Orleans—Mercantile.—Chartered: The Wilson-Lucas Company, Limited, by Clarence R. Wilson and others, with capital of \$5000.

Rayne—Ice and Bottling Works.—R. J. C. Bull will enlarge his ice and bottling works; also contemplates building cold-storage plant.

Shreveport—Land Improvement.—The Hamilton Terrace Land Co., Limited, lately reported incorporated, has purchased land containing springs, together with reservoir with capacity of 60,000 gallons, which it will improve by laying water and gas mains, connect with the city sewerage and establish electric lights, telephones and all modern conveniences; will grade and terrace, erect dwellings, etc. Address W. E. Hamilton.

St. Joseph—Bottling Works, Ice Factory and Laundry.—Drs. E. T. and E. D. Newell will establish bottling works, steam laundry and an ice plant.

Thibodaux—Commission and Brokerage.—Chartered: The Lobdell & Percy Co., Limited, with capital stock of \$25,000, to succeed Lobdell & Percy, commission and brokerage merchants; John Lobdell, president.

MARYLAND.

Baltimore—Bed Factory.—The Maryland Metallic Bed Co., reported last week as organized, will establish a factory for iron and brass beds, with capacity of 100 per day; plant will cost between \$30,000 and \$40,000 when equipped; C. W. Santmyers, president and general manager, 1735 East Townsend street.

Baltimore—Lumber Company.—The National Lumber Co. has been incorporated, with capital stock of \$50,000, to deal in lands, lumber, etc., by Robert St. John Stewart, Joseph L. White, Timothy J. Hooper and others.

Baltimore—Mining.—The Merchants' Gold Mining Co. has been incorporated, with capital stock of \$500,000, for operating mining and mineral properties, by Edward S. Knight, Elisha Caldwell, Walter Techaw and others.

Baltimore—Brick Works.—The Wanamaker Clay Manufacturing Co. has been incorporated, with capital stock of \$300,000, for manufacturing bricks, tile, terra-cotta and other clay products, by Henry W. Wanamaker,

John W. Diven, Dall Worthington and others.

Baltimore—Pool-table Factory.—J. G. Taylor, manufacturer of pool and billiard tables, has purchased building and awarded contract to E. J. Dowell for erection of three-story back building of brick, to cost \$3000.

Baltimore—Dairy.—The Filston Farm Dairy Co., Asa B. Gardner, manager, has optioned property and had plans prepared for model dairy; building will be remodeled, a 12-ton ice plant installed, etc.

Baltimore—Malting Company.—The Marr Malting Co. has been incorporated for manufacturing malt, with capital of \$1000, by August Wilkins, John H. Blumiller, George Marr and others.

Baltimore—Mining.—Maurice Maas, W. V. Roest, Thomas Nolan, Augustus Butts and others have incorporated the San Antonio Gold Mining Co., with capital stock of \$5,000,000.

Cumberland—Cold Storage.—The Hoster Brewing Co. of Columbus, Ohio, has awarded contract to George & John Dressman for building its cold-storage plant in Cumberland, lately reported.

Somerset County—Coal Lands.—Kuhns & Goodwin of Dunlo, Pa., have purchased 3000 acres of coal and timber lands in Somerset county for \$50,000.

Washington, D. C.—Brewery.—Chartered: The Abner-Drury Brewing Co., with capital stock of \$300,000, with C. F. Abner, president; P. A. Drury, vice-president and treasurer, to operate brewery of Abner & Drury, established.

MISSISSIPPI.

Biloxi—Cannery.—The Barataria Canning Co. will increase and enlarge its plant.

Hollandale—Cotton-oil Mill.—The Hollandale Oil Co., reported recently as organized, will build a 60-ton (three-press) mill. Address for full information A. G. Paxton, Arcola, Miss.

McComb—Mercantile.—Chartered: The White & Payne Mercantile Co., with capital stock of \$50,000, by W. E. Payne and others.

Ridgeland—Cannery.—J. C. Yellowly will, it is reported, establish a cannery.

Wiggins—Saw and Planing Mills, etc.—George M. Kennedy, J. S. O'Neal, Joe Breland and W. I. McCoy have incorporated as Kennedy & Co. to deal in timber lands and operate saw and planing mills, etc.; capital stock is \$30,000.

MISSOURI.

Kansas City—Chemical Company.—The Warbington Chemical Co. has been incorporated, with capital stock of \$25,000, by T. J. Quinsberry, R. E. Edmonson, H. L. Dennison and others.

Louisiana—Creamery.—The Louisiana Creamery Co., with capital of \$2000, has been chartered by D. P. Ashburn, Tilley Smith, J. W. Holstead and others.

St. Louis—Paint Factory.—The Pickrite Paint Co., reported lately as incorporated, will manufacture asphalt paints; factory has capacity of 300 barrels per month, and is practically complete; H. Carroll Alford, manager.

St. Louis—Brick Works.—The St. Louis Pressed Brick Co. has been incorporated, with capital stock of \$100,000, by Frederick G. Niedringhaus, Alex. Niedringhaus and Thomas K. Niedringhaus.

St. Louis—Distillery.—Chartered: The Mountain Grove Distilling Co., with capital stock of \$10,000, by Alexander Berg, Robert J. and Joseph Lazarn.

St. Louis—Manufacturing.—Chartered: The Miller Lightning Conductor & Manufacturing Co., with capital stock of \$10,000, by August F. Miller, George A. Miller and Louis E. Miller.

Versailles—Mining.—Chartered: The Pennsylvania Mining Co., with capital stock of \$25,000, by Warren F. Flick, William T. Read, R. J. Flick and others.

NORTH CAROLINA.

Ashe County—Mineral-land Development.—The New River Development Co. has applied for charter, with capital stock of \$50,000, and privilege of increasing to \$5,000,000, to construct railroads, mine ores, build furnaces, construct and operate electric railways, telegraph and telephone systems, etc. It is said the company controls fifteen square miles of magnetic ore properties, and will build furnaces, manufacture steel, etc. Incorporators are Richard Wood, George Wood and G. W. Blake of Pennsylvania, R. B. Roane of Virginia, George P. Pell, W. C. Fields of North Carolina and others.

Charlotte—Ice and Cold-storage Plants.—Thos. J. Davis, F. G. Johnson, J. E. Wearn, L. E. Davis and W. L. Davis have incorporated the People's Ice & Fuel Co., with cap-

ital stock of \$25,000, for the establishment of ice and cold-storage plant, etc.

Charlotte—Cotton Mill.—The Louise Cotton Mills will issue \$100,000 of preferred stock.

Cld—Woodworking Machine.—Harvey L. Beck has invented a machine for making white-oak splits for chair bottoms.

Concord—Water-works and Sewerage.—The city will hold an election to determine the issuance of the \$125,000 of bonds (lately reported) for the purchase and improvement of the present water-works plant and for construction of sewerage system. Address "The Mayor."

Cronly—Pine-fiber Plant.—The American Consolidated Pine Fiber Co. of New York has purchased the pine-fiber plant at Cronly of the Acme Manufacturing Co., and will increase capacity of same.

Enfield—Knitting Mill.—The Enfield Knitting Mills has been chartered, with capital stock of \$10,000, by R. J. Corbett and others.

Fayetteville—Cold-storage Warehouse.—Western parties who contemplate establishing a cold-storage warehouse in Fayetteville are in correspondence with F. R. Rose, secretary Chamber of Commerce.

Greensboro—Electric-light Plant.—The establishment of an electric-light plant is being considered; J. M. Bandy, city engineer.

Haywood County—Timber Lands.—The Tennessee & North Carolina Railroad is constructing about twenty-five miles of road for the purpose of developing 55,000 acres of timber land in Haywood county owned by the North Carolina Land & Lumber Co.; J. B. Hart of Clarksburg, W. Va., president.*

Macon—Cotton Ginnery.—W. G. Egerton is installing Muger system of gins.*

Raleigh—Paper-box Factory.—The Raleigh Hosiery Co. contemplates establishing paper-box factory in connection with its mill.*

Reidsville—Flour Mill.—J. H. Walker & Co. are installing new machinery to increase output of flour mill.

Waynesville—Saw-mill.—E. E. Quinlan and E. W. Monroe will erect large saw-mill and operate as Quinlan, Monroe & Co. Address E. E. Quinlan at "The Kenmore."

Winston—Match Factory.—O. W. Kerner contemplates establishing a match factory.*

Winston-Salem—Auditorium Company.—G. E. Webb and others have incorporated the Winston-Salem Auditorium Co., with capital stock of \$20,000.

SOUTH CAROLINA.

Jonesville—Knitting Mill.—The Jonesville Knitting Mills, reported recently as having increased capital from \$12,000 to \$50,000, will erect new brick building, with engine, boiler and dye rooms extra, and install 100 knitting machines and 100-horse-power engine; J. J. Littlejohn, president.

Kingstree—Publishing.—Chartered: The C. W. Wolfe Publishing Co., with C. W. Wolfe, president, and capital stock of \$3000.

Laurens—Wagon Factory.—Dr. Brooks Connor is interested in the establishment of a \$10,000 wagon factory.

North Augusta—Knitting Mill.—F. E. Abenauf of Augusta, Ga., is investigating the establishment of a knitting mill in South Carolina, probably at North Augusta.

Oswego.—J. H. Thacker has invented a thill coupling which he wants to have manufactured.*

Yemassee—Milling.—Chartered: The Yemassee Milling & Mercantile Co., with capital of \$2000, to operate a flour and grist mill, by J. W. Hill, W. D. Sanders and R. H. C. Hucks.

TENNESSEE.

Brownsville—Brass and Roller Mills.—R. S. Fletcher and Adolphus Fletcher of New York are investigating with a view to establishing a \$150,000 brass and hardware roller mills in Brownsville.

Chattanooga—Coal Mines.—The Pixie Coal Co. has been incorporated to develop coal on Waldens Ridge; M. L. Morrison, president.

Chattanooga—Cotton-batting Mill.—Efforts are being made to organize a company for the establishment of a cotton-batting mill. Names of interested parties will be announced later.

Chattanooga—Cotton-batting Factory.—D. J. Griffin will organize company for the establishment of cotton-batting factory.

Chattanooga—Canneries.—W. H. Payne, Jr., E. J. Nolan, J. P. Pemberton, W. J. Springfield and H. D. Huffaker have incorporated the Chickamauga Company, with capital stock of \$50,000, for establishing canneries, etc.; company purchased 726 acres of land, mill, dam, building, etc., and contemplates erecting large power-house for transmitting power electrically.

Chattanooga—Car-manufacturing Com-

pany.—The Chickamauga Car Manufacturing Co. has been chartered at Nashville, Tenn., with capital stock of \$50,000, by W. H. Payne, Jr., Edward J. Nolan, J. P. Pemberton and others.

Chattanooga—Cotton-oil Mill.—Nat Wootling, vice-president of the American Cotton Oil Co., is investigating with a view to establishing a cotton-oil mill in Chattanooga.

Columbia—Ice Factory.—The Columbia Ice Co. will install additional machinery to double daily capacity.

Dresden—Electric-light Plant.—Efforts are being made to establish an electric plant of 1200 lights. Address "The Mayor."

Franklin—Saw and Planing Mills.—The Adams Lumber Co. of McEwen, Tenn., is investigating with a view to establishing saw-mills at Franklin; will add planing mill and other woodworking equipment if investigations prove satisfactory.

Gleason—Saw and Planing Mill.—Green Travathan will establish saw and planing mill.

Knoxville—Ice Factory.—It is reported that the Armour Packing Co. of Kansas City, Mo., will build 20-ton ice plant in connection with its branch at Knoxville; J. L. Betts, local manager.

Laurel Bloomery—Flour Mill, Telephone System, etc.—George H. Robinson & Sons will build a 35-barrel flour mill, as lately reported, and will also construct five miles of telephone.*

Memphis—Motor Company.—The Dixie Electric Motor Co. has been incorporated, with capital stock of \$30,000, by Walter Goodman, T. G. Galbreath, William Richardson and others.

Nashville—Manufacturing.—Chartered: The Szepto Manufacturing Co. of Hamilton county, with capital stock of \$30,000, by H. J. Weinfelt, J. P. Kyffe, O. T. Peeples and others.

Orlinda—Flour Mill.—William Crocker of Springfield, Tenn., is interested in the establishment of a flour mill at Orlinda.

Rutledge—Lumber Mills, etc.—Rollin B. Jaquith of Elizabethton has purchased several thousand acres of land on Clinch mountain, and will establish mills and factories to utilize the lumber and tanbark and manufacture lumber into finished articles.

Rutledge—Iron and Copper Lands.—J. M. Carpenter and John A. Stone and other Pennsylvania capitalists have purchased 40,000 acres of timber, iron and copper lands in Monroe county, and will construct a railroad to develop every product of the tract. It is understood that saw-mills, woodworking factories, iron furnaces, smelters, etc., will be established; water-power will be developed electrically for operation of various industries.

Springfield—Water-works.—Surveys are being made to determine the cost of constructing system of water-works. Address "The Mayor."

TEXAS.

Athens—Cotton-oil Mill.—J. H. Hardaway, J. F. Gilmore of Kaufman, Texas, and others have purchased site and procured charter for the Athens Cotton Oil Co. to establish the \$50,000 cottonseed-oil mill lately reported; will be a four-press mill.

Athens—Cotton-oil Mill.—Morris & Phillips of Greenville have purchased site and will erect an oil mill at Athens.

Beaumont—Oil Company.—The Gulf Pool Oil Co. has been chartered, with capital stock of \$50,000, by R. M. Mottmer, J. A. Brucssard and M. L. Bixler.

Beaumont—Oil-pipe Line.—J. M. Guffey & Co. of Pittsburg, Pa., will construct at once a six-inch pipe line from their Beaumont oil well to Port Arthur, a distance of about twenty-five miles. Dispatches state that this work will result in the erection of oil refinery and tanks at Port Arthur to prepare oil for export.

Beaumont—Oil Wells.—E. B. Webb of E. B. Webb & Co., Cleveland, Ohio, has leased 4228 acres of oil and mineral lands near Beaumont, and will develop same.

Beaumont—Brick-yard.—John Elsenhart of Denver, Col., will establish works in Beaumont with daily capacity of about 20,000 brick.

Beaumont—Oil-pipe Line.—The Gulf Oil & Pipe Line Co. has been incorporated, with capital stock of \$500,000, to establish oil companies and prospect for oil, etc., by W. R. J. Stratford, F. B. Stratford, L. L. Emery and others.

Bonham—Mercantile.—Chartered: The White-Blackney-Fuller Dry Goods Co., with capital stock of \$30,000, by P. H. White and others.

Burke—Lumber Mills.—The Texas Lumber

capital stock of \$10,000, by H. H. Emmett, E. B. McCall and T. A. Burke.

Burlington.—Chartered: O'Neill-Tarver Company, by P. C. Tarver and others, with capital stock of \$75,000.

Calvert—Coal Mines, etc.—The Brazos Valley Coal, Clay & Manufacturing Co., reported previously as incorporated, has organized, with J. H. Drennen, president; S. W. Parish, secretary, and L. T. Fuller, superintendent; will open mines at once, installing complete mining equipment; will also later in the year install brick and sewer pipe works. Address the superintendent.*

Commerce—Mercantile.—The Rutland-Mallory Company has been incorporated, with capital stock of \$30,000, by W. B. De Jannett, L. W. Rutland and others.

Conroe—Lumber Mills.—E. N. Qualline & Co. have incorporated for manufacture of lumber, ties and timber, etc.

Corsicana—Clothing Company.—The Nicholson-Watson Clothing Co., with capital stock of \$10,000, has been chartered by J. H. Watson, J. B. Nicholson, Hugh Emerson and others.

Dallas—Mercantile.—Chartered: The Doolittle-Simpson Company, with capital stock of \$25,000, by E. W. Doolittle and others.

Dallas—Cotton Mill.—J. E. Wylie (colored), previously noted as to establish a cotton mill, is preparing to remodel buildings and buy equipment of 3000 spindles and complete; will use electricity to operate the machines; also will employ only colored operatives.

Dallas—Stock-yards.—Chartered: The Dallas Union Stock-Yards Co., with capital stock of \$30,000, by R. H. McNott, A. C. Thomas and Allen Searcy.

Fort Worth—Cannery and Cereal Factory.—C. N. & H. Abernethy of Circleville, Ohio, will establish a cannery and cereal factory at Fort Worth.

Fort Worth—Cattle Company.—Chartered: The Bates Cattle Co., with capital stock of \$30,000, by W. S. Turner and others.

Galveston—Terminal Improvements.—D. D. Mallory & Co., Burling Slip, New York, have had plans prepared by W. H. Tyndall for the proposed improvements to Galveston terminals; plans call for construction of freight shed and platforms, wharf extension, etc., at a cost of \$50,000.

Hallettsville—Oil Lands.—Friench Simpson is organizing a \$20,000 stock company for prospecting for oil.

Hearne—Cotton-oil Mill.—The company mentioned lately to be formed for establishment of cottonseed-oil mill is known as the Planters' Oil Co., with capital stock of \$50,000. L. W. Carr is president, and P. S. Grogan, vice-president and manager. Address last named.

Hico—Mercantile.—Chartered: Petty Bros. Mercantile Co., with capital stock of \$50,000, by O. C. Petty and others.

Houston—Vehicle Factory.—H. C. Morehart, P. D. Keller and H. D. Schlester have incorporated the Morehart & Keller Co., with capital stock of \$50,000, for the manufacture of vehicles, etc.

Houston County—Saw-mill.—The saw-mill to be erected in this county, full account of which has been reported, will be operated by the Louisiana & Texas Lumber Co.; W. H. Carson, superintendent Central Coal & Coke Co., Texarkana, Texas, may be addressed.

Itasca.—M. G. Easter, W. F. Easter and others have incorporated the Hooks-Easter Company, with capital stock of \$10,000.

La Porte—Oil Lands.—J. M. Guffey & Co. of Pittsburg, Pa., have leased 1900 acres of oil lands near La Porte, are negotiating for 8000 more and will inaugurate extensive developments at once.

Liberty—Oil Company.—The Liberty County Oil Co. has been incorporated, with M. D. Rayburn, president; E. B. Pickett, vice-president, and H. F. Richardson, treasurer.

Midlothian—Mercantile.—The Midlothian Mercantile Co. has been chartered, with capital stock of \$30,000, by S. J. Martin and others.

Mineola—Cotton-oil Mill.—Messrs. Fry, Key & Sloan of Marshall will, it is reported, build a 60-ton cottonseed-oil mill in Mineola.

Mount Calm—Broom Factory.—The Atwood Broom Factory will be enlarged and machinery installed for manufacture of handles, etc.

Orange—Oil Lands.—M. L. Lockwood of Pennsylvania has leased and will develop several thousand acres of oil lands at Orange.

Port Arthur—Oil Tanks.—J. M. Guffey & Co. of Pittsburg, Pa., reported last week (under Beaumont) as to construct 25-mile oil-pipe line from Beaumont to Port Arthur, have let contract for the erection of five oil

tanks 35x130 feet each, with capacity each for 50,000 barrels of oil, to be located at Port Arthur; two or three tanks of 35,000 barrels capacity each will be built at Beaumont to handle the Lucas well product. About \$250,000 will be expended for tanks, pipe and construction.

Sherman-Lake and Dam.—The Interurban Railway Co. has let contract to Hurley & Bolen of Denison for construction of proposed dam and lake; area of lake, six acres.

Sour Lake—Oil Lands.—R. J. Merry of Parkersburg, W. Va., has purchased 750 acres of lands in the neighborhood of Sour Lake, and will prospect for oil.

Taylor—Telephone System.—W. D. O'Kell of San Antonio is investigating with a view to establishing telephone system in Taylor.

Waco—Gin-saw Filler Factory.—The Bradley Gin-Saw Filler Co., reported recently as incorporated, has organized with the purpose of buying the business of C. A. Richardson & Co., manufacturers of gin-saw fillers.

Wills Point—Oil Company.—The Wills Point Cotton Oil Co. has increased its capital stock from \$35,000 to \$60,000.

VIRGINIA.

Buena Vista—Tannic-acid Factory.—The Blue Ridge Tanning Co. has purchased eighteen acres of land as site for erection of factory for extracting tannic acid from chestnut wood.

Charlottesville—Ice and Canning Factory.—The Charlottesville Ice & Canning Plant has been incorporated, with capital stock of \$25,000, by R. T. W. Duke, president; T. J. Wells, vice-president, and John P. Elliott, secretary and treasurer.

Chilhowie—Planing Mill.—The Chilhowie Lumber Co. has sold its planing mill to J. S. Morris and R. B. Grever, who will operate it.

Danvers—Tannery.—J. C. Specht is the party reported recently as establishing tanning and dye extract works.

Fredericksburg—Flour and Meal Mill.—Mrs. E. C. L. Flicklen has purchased the Bridgewater flour and meal mills.

Monterey—Tannery.—It is reported that a company will establish a steam tannery. W. E. Nelson can inform.

Norfolk—Mercantile.—Chartered: The David Pender Grocery Co., with capital stock of \$50,000, by David Pender (president) and others.

Norfolk—Cutlery Company.—The Norfolk Cutlery Co. has been incorporated, with capital stock of not less than \$25,000 nor more than \$50,000, for the manufacture of cutlery and silver-plated ware. R. B. Fentress is president; S. Q. Collins, vice-president, and B. W. Leigh, secretary and treasurer. It was reported during the week under Lambert's Point that this company, formerly the Bridgeport Silver Plating Works, would begin operations at once.

Petersburg—Ice Factory.—W. H. Butler of Baltimore, Md., is investigating with a view to establishing an ice factory in Petersburg.

Richmond—Ship-yards.—Chamblin & Scott contemplate establishing ship-yards.

Richmond—Land Improvement.—The Westwood Land Co. has been incorporated to improve and deal in real estate; minimum capital \$5000; maximum, \$50,000; S. H. Hawes, president; William C. Preston, secretary.

Tye River—Ice Plant.—The Piedmont Refrigerating Co. has contracted for a 25-ton refrigerating machine.

Waynesboro—Foundry.—The W. J. Loth Stove Co. has commenced erection of proposed foundry building for doubling capacity of its stove works.

West Point—Planing and Woodworking Mill.—Emmett Richardson is erecting planing and woodworking mill.

WEST VIRGINIA.

Elkins—Oil and Gas Company.—The Middle Fork Oil & Gas Co. has been incorporated, with authorized capital of \$200,000, by David Elkins, Calvin H. Livingstone, Howard Sutherland and others.

Huntington—Lumber Mills.—J. H. Wilson & Sons will rebuild their \$75,000 lumber mills, reported burned.

Huntington—Telephone System.—The Guyandotte Valley Telephone Co., reported recently as incorporated, will construct telephone system. Address for full particulars T. S. Scanlon.

North Fork Junction—Ice Plant.—The Flat Top Ice & Cold Storage Co. has contracted for a 15-ton ice plant.

Phillippi—Water-works.—The construction of a system of water-works is proposed. Address Barbour Hardware Co.

Rowlesburg—Bridge.—A committee has

been appointed to locate and receive bids for construction of bridge across Cheat river, reported during the week; will be 480 feet long and probable cost between \$17,000 and \$30,000. Address John F. Pierce.

Scarbrough—Coal Mines, etc.—Chartered: The White Oak Transportation Co. has been incorporated to mine coal, manufacture coke, etc., with capital stock of \$30,000, and privilege of increasing to \$500,000, by S. Dixon, McDonald, W. Va.; Enoch Smith, Charleston, W. Va.; F. Dixon, Longacre, W. Va., and others.

Slatersville—Oil and Gas Company.—Clell Nichols, Harry Ihrig, F. D. McCoy and others have incorporated the Ihrig-Nichols Oil & Gas Co., with capital stock of \$10,000.

West Columbia—Antimony and Lead-ore Deposits.—John Hanna is investigating, and may develop antimony and lead-ore deposits.

BURNED.

Birmingham, Ala.—Hardie-Tynes Foundry & Machine Co.'s plant; estimated loss \$75,000.

Cordele, Ga.—Tommy & Co.'s warehouse. Memphis, Tenn.—Foster-Robinson Gin Co.'s plant; loss \$35,000.

Sterling, Va.—H. B. Hutchison & Co.'s grain elevator and warehouse; loss \$3500.

Wharton, N. C.—Five dry-kilns of Addington Lumber Co.; estimated loss \$20,000.

Wilkesboro, N. C.—L. E. Davis' flour mill and saw-mill; loss \$5000.

BUILDING NOTES.

Atlanta, Ga.—Reformatory.—A reformatory will be erected for Fulton county. Address Commissioner E. W. Palmer.

Atlanta, Ga.—Dwellings.—George Muse will erect thirteen dwellings to cost \$5000. J. T. & J. N. Brown have contract.

Atlanta, Ga.—Dormitory, etc.—W. T. Downing will draw plans for the proposed \$25,000 dormitory for Georgia School of Technology. Lyman Hall, president; electrical building will also be built at cost of \$15,000, architect for which has not been announced.

Baltimore, Md.—Theater.—Gus A. Wegfarth of Buffalo, N. Y., reported recently as having purchased and to rebuild Front Street Theater, is in Baltimore (at 1207 East Monument street) to let contracts for \$50,000 worth of improvements. Plans and specifications are by August Esenwein of Buffalo (now at Carrollton Hotel, Baltimore).

Beaumont, Texas—Office Building.—V. Weiss has had plans made for erection of a five-story brick office building to have electric lights, hot and cold water, electric bells, elevator, etc., and cost \$50,000.

Birmingham, Ala.—City Hall.—D. A. Helmich, architect, will receive bids until February 25 for erection of the proposed city hall. Plans and specifications may be seen at office of architect; certified check for \$25 required; usual rights reserved.

Birmingham, Ala.—School Building.—Miller & Martin, architects, Hood Building, will receive bids until February 23 for four-room brick school to be erected by board of education. Plans and specifications at office of architects.

Birmingham, Ala.—Bank Building.—Chas. Wheelock & Sons will receive sealed proposals until February 20 for erection and completion of proposed bank building of the Birmingham Trust & Savings Co. Bids to be accompanied by certified check for \$500. Usual rights reserved.

Clarksville, Ga.—Warehouse.—The Clarksville Tobacco & Manufacturing Co. will build brick warehouse 40x80 feet.

Fairmont, W. Va.—Opera-house Company.—Chartered: The Fairmont Opera-House Co., with capital stock of \$500, and privilege of increasing to \$100,000, by Samuel R. Nusum, J. T. Miller and others.

Fort Washington, Md.—Hospital.—Abe S. Bickham, quartermaster, United States Volunteers, 419 North Washington street, Alexandria, Va., will open proposals February 26 for construction at Fort Washington of a 12-bed hospital, including plumbing, electric wiring and hot-air heating. Bidders to specify on each class of work as well as total amount. Information may be had on application.

Gainesville, Ga.—Cottages.—The Vesta Cotton Mills, Charleston, S. C., will build 80 to 100 cottages at Gainesville.

Galveston, Texas—Home.—George B. Stowe is preparing plans for a new Orphans' Home to cost about \$30,000.

Gonzales, Texas—Residence.—Allert & Scherbaum have contract at \$15,400 for erection of two-story brick residence for G. N. Dilworth.

Graniteville, S. C.—Cottages.—W. H. Hite of Aiken, S. C., has contract to build 100 four-room cottages for the Graniteville Manufacturing Co.

Grover, N. C.—Dwelling.—J. G. White wants to correspond with architects relative to plans for five to 10-room one and two-story modern residence.

Independence, Va.—Office.—Supervisors of Grayson county awarded contract to the B. F. Smith Fireproof Construction Co. of Washington, D. C., to build fireproof clerk's office after plans by B. F. Smith; amount of contract \$4000.

Jesup, Ga.—School Building.—The vote held to determine issuance of \$10,000 of bonds for erection of school building resulted affirmatively. Address "The Mayor."

Lincolnton, N. C.—Jail, etc.—The commissioners of Lincoln county awarded contract to the B. F. Smith Fireproof Construction Co. of Washington, D. C., at \$4500 to build two fireproof record rooms and remodel jail, adding steel cells, after plans by B. F. Smith.

Lovettsville, Va.—Church.—Bids for erection of new building for Evangelical congregation will be received until February 15. Plans and specifications may be seen at parsonage. Building committee, Rev. Lewis T. Lampe, chairman, reserves usual rights.

Martinsburg, W. Va.—Business Building.—C. P. Herring will erect a three-story brick business building.

Maryville, Tenn.—Jail.—The St. Louis (Mo.) Construction Co. has contract for construction of Blount county's proposed \$11,000 jail.

McComb City, Miss.—Residence.—D. Anderson Dickey will receive bids until February 20 for erection and completion of two-story frame residence for Dr. W. W. Robertson. Plans and specifications can be obtained from Mr. Dickey. Usual rights reserved.

New Orleans, La.—Arena Building.—It is reported that plans have been drawn for an arena building, with seating capacity for 12,000 people. Mr. De Grange, vice-president New Orleans & Carrollton Railroad, can probably inform.

New Orleans, La.—Church.—The Owen Building Co. has contract for erecting \$40,000 edifice for the Prytania Street Presbyterian Church.

Norfolk, Va.—Office Building.—Mordecai T. Endicott, chief bureau yards and docks, Navy Department, Washington, D. C., will receive sealed proposals until February 16 for constructing a two-story office building at navy-yard. For plans, specifications, forms of proposals, etc., address "Commandant Navy-Yard."

Norfolk, Va.—Lodge Building.—Norfolk Lodge, No. 38, B. P. O. E., will erect a four-story brick and stone building to have electric lights, steam heat, elevators, etc.

Oakland, Md.—Business Building.—D. E. Boiden and Truman West will erect a two-story frame business building 46x32 feet.

Richmond, Va.—Cold-storage Buildings.—R. A. Siewers has received contract for erection of buildings for the Merchants' Cold Storage & Ice Manufacturing Co., a full account of which was given in November.

Rockville, Md.—Bank Building.—B. Stanley Simmons of Washington, D. C., has prepared plans for bank building for the Farmers' Banking & Trust Co. of Rockville.

San Antonio, Texas—Residence.—D. J. Woodward will erect a \$10,000 residence.

Tampa, Fla.—Building.—The Triumph Coffee Mills will erect new building.

Washington, D. C.—Apartment-house.—The Sherman Apartment-House Co., reported lately as incorporated, has had plans made for erection of a seven-story apartment-house. T. F. Schneider is president. Chas. D. Walcott and others will also build an apartment-house.

Wheeling, W. Va.—Car Barns.—The Wheeling Traction Co. has plans for erection of two-story brick and steel car barns 125x325 feet.

Cincinnati, Ohio—Steel Building.—The Lane & Bodley Co. will build a steel structure and foundry building complete. Ward Baldwin, Mitchell Building, will furnish specifications on application and open proposals February 11.

RAILROAD CONSTRUCTION.

Railways.

Abbeville, La.—The Manufacturers' Record is officially informed that the Southern Pacific Railway Co. is making a survey between Abbeville and Gueydan, a distance of twenty-three miles, but that no decision has been reached in the matter as yet. J. T. Mahl at Houston, Texas, is engineer.

Albion, Md.—Surveys are being made for an electric line along the Patuxent river from Albion to Relay, a distance of ten miles. The road will pass through Ellicott City if built.

Athens, Tenn.—The Tellico Railroad Co. is reported as having decided to build an extension fifteen miles in length through a portion of Monroe county, Tennessee. T. E. H. McCroskey at Athens is president of the company.

Bainbridge, Ga.—The Georgia Pine Railway Co. is making a survey from Arlington to Columbus, Ga., and it is reported that it may be built during the present year. Work is now in progress between Bainbridge and Tallahassee, Fla., a distance of forty miles. R. A. Hardaway at Bainbridge is chief engineer.

Baltimore, Md.—Frank R. Biedler of Baltimore, who is promoting the road between Baltimore and Drum Point, on Chesapeake bay, has recently made a trip over the line with several New York parties, and it is reported that the plans to complete it are being considered. The road has been graded nearly its entire length, a distance of sixty miles.

Baltimore, Md.—The Maryland Electric Railway Co. has asked for a franchise to build a line in Baltimore county extending to North Point and Sparrow's Point. Isaac Lobe Straus of Baltimore is counsel for the company.

Bastrop, La.—The Little Rock & New Orleans Construction Co. has been incorporated in New Jersey to build the proposed railroad from Bastrop to Little Rock, Ark., which will form the extension of the New Orleans & Northwestern Railroad. L. K. Hyde of Titusville, Pa., is vice-president and general manager of the railroad company.

Batesville, Ark.—The Business Men's League of Batesville is agitating an extension of the Choctaw, Oklahoma & Gulf system from Jacksonport to Batesville. J. C. Yancey is one of the promoters of the scheme.

Belington, W. Va.—H. C. Henderson of Williamstown, W. Va., has been elected president of the Cleveland, Williamstown & Belington Railroad Co., organized to build from Williamstown to Belington, a distance of sixty-five miles. Connection will be made with Marietta, Ohio, by a bridge across the Ohio river at Williamstown.

Chattanooga, Tenn.—It is reported that the plan to build a railroad from Chattanooga to Waldens Ridge has been revived by local parties.

Crockett, Texas.—A correspondent of the Manufacturers' Record writes that the proposed railroad between Lufkin and Crockett will be about twenty-eight miles in length, and that contracts have been let for grading and bridges. It is stated that the Arkansas & Choctaw Railway Co. is promoting the line. R. H. Keith at Kansas City is president of the Arkansas & Choctaw.

Crockett, Texas.—It is reported that Drexel & Co., bankers, of Philadelphia, are interested in the railroad proposed between Crockett and Lufkin, recently referred to in the Manufacturers' Record as being promoted by the Kansas City Coal & Coke Co. R. H. Keith of Kansas City is directly in charge of the project.

Denison, Texas.—Tracklaying has begun upon the electric railroad between Denison and Sherman, and it is expected to complete the road ready for operation in a few weeks. F. H. Fitch is general manager of the promoting company.

El Paso, Texas.—Messrs. George S. Goode & Co. of El Paso, it is reported, have secured a contract for the extension of the El Paso & Northeastern Railroad to El Paso, a distance of 130 miles.

El Paso, Texas.—Surveys have recently been made for another line to El Paso from a point in New Mexico. It is understood that Messrs. Phelps, Dodge & Co. of New York are interested in it.

Fayetteville, Ark.—W. M. Kenedick of Kansas City, Mo., has taken a contract to construct a railroad from Fayetteville to a point in the Indian Territory.

Fincastle, Va.—James Godwin informs the Manufacturers' Record that he holds a charter to build the proposed electric railroad between Fincastle and Roanoke, Va., a distance of twelve miles. Right of way has also been secured. Mr. Godwin is ready to correspond with contractors or promoters in the interest of the enterprise.

Fort Worth, Texas.—It is reported that the scheme to build a railroad between Fort Worth and Albuquerque, N. M., has been revived, and that B. B. Paddock of Fort Worth is interested.

Glasgow, Va.—It is reported that the Ches-

apeake & Ohio Railway Co. is considering the construction of tracks for a yard at Glasgow, and that it may make several improvements to its line in the vicinity of this town. F. I. Cabell at Richmond is engineer.

Hollins, Ala.—The Hollins, Heflin & Sylacauga Railway Co. is constructing an extension about eight miles in length. The road is now in operation a distance of twenty-eight miles. J. A. Kaul at Hollins is president of the company.

Jefferson, N. C.—The New River Development Co., it is reported, has been organized to build a railroad through a portion of Ashe county to connect with the Norfolk & Western system. C. S. Churchill at Roanoke is engineer of the Norfolk & Western.

Jefferson, N. C.—It is reported that the proposed road through Ashe county, North Carolina, may be built by the Norfolk & Western, which has applied for a franchise to extend its line through Carroll and Grayson counties in Virginia. The extension in North Carolina, it is stated, will be through portions of Ashe, Alleghany and Watauga counties. C. S. Churchill at Roanoke, Va., is engineer.

Kansas City, Mo.—It is reported that the Kansas City, Fort Scott & Memphis Railroad Co. has let a contract for the construction of a branch about eight miles long near Joplin, Mo. D. Bontecou of Kansas City is chief engineer.

Kansas City, Mo.—It is reported that Messrs. Denison, Prior & Co., bankers of Cleveland, Ohio, are interested in the scheme to build an electric railroad between Kansas City and St. Joseph by way of Parkville. The estimated length of the road is fifty miles. J. M. Brown & Co. of Kansas City are said to represent the promoters.

Knoxville, Tenn.—Surveys have been completed for the proposed railroad to be built by the East Tennessee Iron & Coal Co. W. C. Crozer of Knoxville is engineer.

Lake Charles, La.—It is reported that the Gulf, Colorado & Santa Fe Railroad Co. is interested in the Lake Charles & Rice Belt Railroad, recently referred to in the Manufacturers' Record, and that a line will be built from Marshall, Texas, to Lake Charles, a distance of 150 miles, to connect with it. A. B. Eastman is general manager of the Rice Belt Railroad. L. J. Polk at Galveston is general manager of the Santa Fe.

Loudon, Tenn.—The Southern Railway Co., it is announced, has decided to survey a road between Loudon and Clinton, with the view of shortening the distance between its main line and the Knoxville & Ohio division. W. H. Wells at Washington is engineer.

Louisville, Ky.—The Louisville, Henderson & St. Louis Railroad Co. has under consideration an extension through a portion of Hancock county to reach coal deposits in that locality. The branch, if built, will connect with the main line near Hawesville. Attila Cox at Louisville is president of the company.

Louisville, Ky.—It is reported that the Ohio parties interested in the electric line between Louisville and La Grange, Ky., through the Pewee valley, include David Morison and C. L. Morely of Cleveland, who are represented by A. L. Smartt, also of Cleveland. It is stated that a construction company has already been formed and the necessary rails purchased for the road.

Lufkin, Texas.—E. A. Frost, general manager of the Texas & Louisiana Railway Co., writes that it is expected to build an extension of about eight miles during the present year.

Marion, S. C.—It is announced that the Carolina Northern Railroad Co. has given a contract to the Carolina Construction Co. to grade the extension between Barnesville, N. C. and Marion, S. C. The distance is twenty-eight miles. J. C. Ross of Lumberton, N. C., is general manager of the construction company.

Mayo, Fla.—The Suwannee & San Pedro Railroad Co. it is announced, has decided to extend its road to Mayo and Perry, a distance of twenty-five miles. R. P. Daniel at Jacksonville is president of the company.

Nashville, Tenn.—Noel & Thompson of Chattanooga, it is reported, have secured a contract to build thirty-five miles of extension of the Tennessee Central Railroad between Nashville and Clarksville. Jere Baxter at Nashville is president of the railroad company.

New Orleans, La.—Bids will be received until February 1 for grading about three miles of track at the works of the Myles Salt Co. J. N. Hazlehurst, 606 Commercial Place, may be addressed.

Newport, Ark.—Right of way is being secured in the interest of a railroad between Newport and Rush, Ark., a distance of

eighty-five miles. It is stated that Kansas City capitalists are interested in the project.

Newport, Tenn.—A correspondent of the Manufacturers' Record writes that work on the right of way of the Tennessee & North Carolina Railroad has commenced, and that it is expected to build about twenty miles between now and September 1. The company will probably be in the market for relaying rails as well as bridges and rolling stock. The railroad will extend through a portion of Haywood, N. C., to Waynesville. J. J. Holloway at Wheeling, W. Va., is reported as president of the company.

Newport News, Va.—The Norfolk & Northern Neck Railroad Co. has asked for legislative authority to build a road from Newport News to a point in Rockingham county. Among those interested are Isaac A. Hopper and Charles D. Woodhall.

New Roads, La.—B. S. Wathen, chief engineer of the Texas & Pacific Railway Co., writes the Manufacturers' Record that the company proposes building an extension of its New Roads branch to a point near the mouth of the Red river during the present year, and will probably ask for a permit to bridge the Red river.

Norfolk, Va.—It is reported that the Chesapeake Transit Co. has contracted with Isaac A. Walker & Son of Philadelphia to build its line from Norfolk to Cape Henry. The estimated length of the road is twenty miles. The president of the company is Abram C. Mott of Philadelphia, and the vice-president, J. E. Cole of Norfolk.

Norfolk, Va.—The Norfolk & Bay Shore Railroad Co. has asked for legislative authority to construct a railroad.

Norfolk, Va.—The Norfolk & Lynnhaven Railroad & Terminal Co., it is reported, is making arrangements to build its line, which is to extend from Norfolk to Lynnhaven Bay, a distance of about eight miles. Among those interested are R. H. Osborne and William Lamb.

Orange, Texas.—J. A. Holland informs the Manufacturers' Record that the Orange & Northwestern Railroad Co. proposes building about thirty miles of line, but may extend the road later on. The first portion is to be built immediately, and surveys are now being made. G. Bedell Moore is president, and Alexander Gilmer, vice-president, of the company, which is capitalized at \$200,000.

Pine Bluff, Ark.—The proposed extension of the Pine Bluff & Arkansas River Railroad will be about ten miles in length. G. L. Morris at Pine Bluff is general manager of the company.

Porter, W. Va.—It is reported that the Porter's Creek & Gauley Railroad will be extended a distance of about fourteen miles during the present year. It is now in operation a distance of twenty-three miles. Peter Carroll at Charleston, W. Va., is general manager.

Richmond, Va.—Rails have been received for a portion of the electric railroad between Richmond and Petersburg, and it is announced that the Cleveland Construction Co., the general contractor, has sublet the work to James F. Bradley of Richmond.

Roanoke, Va.—E. L. Stone and J. B. Fishburn are members of the committee appointed to consider the plan to build an electric railroad between Roanoke and Flucastie, referred to in the last issue of the Manufacturers' Record.

Ruston, La.—The Arkansas Southern Railroad Co., it is stated, has decided to complete the extension now under construction to Sabine Pass. The company has recently elected J. W. Brown, president, and C. E. Neeley, vice-president. The mileage in operation extends from Eldorado, Ark., to Cedar, a distance of 107 miles. The proposed extension will be built from Cedar south.

Shreveport, La.—Officials of the Texas & Pacific Railroad Co. have recently made an inspection of a route between Shreveport and Natchitoches, through a portion of the Red river valley. It is understood that the company is considering an extension between the towns, an estimated distance of seventy-five miles. L. S. Thorpe at Dallas, Texas, is vice-president of the company.

Sparta, Ga.—The East & West Railroad Co. has been formed to build between Sparta and Sandersville, a distance of thirty miles. Among those interested are R. M. Mitchell of Atlanta and S. Reese of Sparta.

Versailles, Ky.—The Louisville & Atlantic Railway Co. is building an extension twenty-seven miles in length to complete the line, as originally intended, to Beattyville, Ky. J. P. Amsden at Versailles is president of the company.

Washington, D. C.—Joseph S. Miller of Washington, it is announced, is president of the Great Falls & Old Dominion Railroad

Co., which has begun the construction of its electric line from Rosslyn, Va., to the Potomac river, a distance of fourteen miles.

Waycross, Ga.—The Waycross Air Line Railway Co. has completed its extension to Fitzgerald, a distance of thirty miles, making the entire length of the road seventy miles. The company is considering an extension beyond Waycross. George D. Wadley at Waycross is general manager of the company.

Wichita Falls, Texas.—It is reported that Drexel & Co. of Philadelphia are interested in a proposed railroad from Wichita Falls to Greenville, Miss., passing through a section of Arkansas. At Greenville connection would be made with the Southern system.

Street Railways.

Beaumont, Texas.—M. A. Orlopp, one of the directors of the Beaumont Street Railway Co., states that it is expected to begin building this line in the near future.

Bowling Green, Ky.—It is stated that the town authorities have decided to sell a franchise for the right of way for a street railway. M. H. Crump may be addressed.

Chattanooga, Tenn.—The Chattanooga Electric Railway Co. has purchased 300 tons of rails for the construction of its proposed extensions in the suburbs.

Natchez, Miss.—The board of aldermen have granted a 50-year franchise to the Natchez Street Railway & Power Co., and it is reported that work is to begin upon the line within sixty days.

Norfolk, Va.—The Norfolk, Portsmouth & Berkley Terminal Co. has been organized, it is reported, to build a tunnel between the cities mentioned, and may construct a railroad line.

Wheeling, W. Va.—The Wheeling & Cadiz Electric Railway Co. has asked for a franchise to build its electric line on several of the city streets. The matter is now under consideration.

Machinery, Proposals and Supplies Wanted

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Baling Presses.—Atlanta Metal & Bottle Co., Atlanta, Ga., is in the market for baling presses.

Beacons.—Sealed proposals will be received until February 19 at office of lighthouse engineer, Mobile, Ala., for furnishing all materials and labor necessary for erection of two lighted beacons at East Pass, Fla., in accordance with specifications, copies of which, with blank proposals and other information, may be had from Lieut.-Col. A. N. Damrell, corps of engineers, United States Army.

Boat Construction.—C. H. McKinstry, captain, United States engineer office, St. Augustine, Fla., will receive proposals until March 7 for building and equipping a steel hull, stern wheel, combined dredge and snagboat. Information on application.

Boat Construction.—F. J. Higginson, rear-admiral, United States Navy, chairman, office lighthouse board, Washington, D. C., will receive proposals until March 2 for furnishing materials and labor for construction of twin-screw steel steam lighthouse tender Larkspur, in accordance with specifications, copies of which, with blank proposals and information, may be had upon application to above office or office of lighthouse inspector, Tompkinsville, N. Y.

Boiler.—See "Saw-mill."

Boiler.—June Bros., Hammond, La., are in the market for 100-horse-power boiler, new or second-hand.

Boiler and Engine.—See "Woodworking Machinery."

Boiler and Engine.—W. G. Egerton, Macon, N. C., will buy 25-horse-power engine and 30-horse-power boiler.

Bollers.—E. P. B., care Manufacturers' Record, wants second-hand 80 to 100-horse-power bollers, with large tubes, firebox preferred, 100 pounds steam pressure, Hartford inspection.

Bollers, Engines, etc.—Galloway Coal Co., R. Galloway, president, Memphis, Tenn., expects to purchase a large hoisting engine, bollers, etc.

Bottling Machinery.—W. H. Underwood, Montezuma, Ga., wants prices on machinery for soda-water plant.

Box Manufacturers.—L. J. Turner, Grover, N. C., wants prices on folding pasteboard boxes, unprinted.

Brick Machinery.—See "Sewer-pipe Machinery."

Brick Machinery.—See "Sewer-pipe Machinery."

Building Material and Equipment.—A. E. Hilderbrand, Box 136, Red Lion, Pa., wants bids and circulars from building-material manufacturers.

Building Materials.—J. W. Tallafiero, 122 Thirty-fifth street, Newport News, Va., wants prices on building materials, including iron and corrugated beams, glass, lime, plaster, cement, brick, stone, etc.

Canning Machinery.—J. T. Nicholson, M.D., Bath, N. C., is in need of canning machinery.

Canning Machinery.—D. J. McMillan & Co., South Washington, N. C., want canning machinery, cans, boxes, etc.

Dye Plant.—Griffin Knitting Mills, E. H. Spivy, secretary, Griffin, Ga., wants estimates on dye plant complete for cotton ribbed underwear mill of 100 dozen per day capacity.

Dynamo.—See "Engine."

Electrical Machinery.—See "Foundry."

Electrical Machinery.—Geo. H. Robinson & Sons, Laurel Bloomery, Tenn., will want an electric dynamo of fifty lights of 16 candle-power each.

Electric-light Plant.—C. B. Hendrix, Sandersville, Ga., wants to correspond with electric-light companies.

Electric-light Plant.—Board of aldermen, Lake Providence, La., will open proposals February 20 for the construction of water-works and electric-light plant, after specifications, of which copies may be obtained on application to G. M. Franklin, mayor. Machinery will include two 350,000-gallon pumps, air compressor and accumulator, high-speed engine and 30-kilowatt generator, two 40-horse-power bollers, etc.

Elevators.—High Point (N. C.) Upholstering Co. is in the market for one belt-power elevator and one hand-power elevator.

Elevators.—Atlanta Metal & Bottle Co., Atlanta, Ga., is in the market for elevators.

Engine.—See "Knitting Mill."

Engine.—Williams Bros. Slate Co., Snowden, Va., wants hoisting engine, second-hand.

Engine.—Peacock's Iron Works, Selma, Ala., wants prices (dealers') on small six-horse-power high-speed engine for driving a dynamo.

Engine.—Roanoke Coal Supply Co., F. P. Filippo, secretary, Roanoke, Va., is in need of a five or six-horse-power engine, dynamo or gasoline engine, new or second-hand, for sawing cordwood.

Engines.—See "Foundry."

Engines.—L. E. Kennedy & Co., 61 Broadway, New York city, wants 22,000 horse-power second-hand Corliss tandem duplex or compound engines, units 2000 upwards, for cash.

Fire Protection.—See "Foundry."

Flour Mill.—C. C. Cox, Jonesboro, Tenn., wants complete outfit for roller flour mill.

Founders.—J. H. Thacker, Oswego, S. C., has invented a thill coupling, and wants to have same manufactured.

Foundry.—Dodge Manufacturing Co., Mishawaka, Ind., is considering bids for construction and equipment of foundry and machine shop, to include two buildings, 200x125 feet each, steel construction, gravel roof, brick walls; also two 35-ton travelling cranes, heating and sprinkler equipment, two-inch cupola, 150-kilowatt generator and engine, 28x48 Corliss engine.

Foundry Equipment.—Ocala Foundry and Machine Works, Ocala, Fla., is in the market for a second-hand 72-inch boring mill and a wet emery wheel tool grinder.

Foundry Machinery.—Union Iron Works Co., Selma, Ala., is in the market for a light car-wheel borer, with universal chuck, to take wheels up to twenty-six inches in diameter, new or second-hand.

Furniture Manufacturers.—J. G. White, Grover, N. C., wants catalogues and prices from furniture, carpet and wallpaper manufacturers and dealers.

Gasoline Engine.—See "Engine."

Gasoline Engine.—See "Knitting Mill."

Harness.—W. W. King, Charlottesville, Va., wants catalogues and prices of heavy wagon harness.

Heating Apparatus.—Harry E. Chapman, Chattanooga, Tenn., will want to purchase heating apparatus.

Heating Equipment.—See "Foundry."

Holisting Engine.—See "Engine."

Holisting Engine.—See "Boilers, Engines, etc."

Ice Plant.—J. H. Hull, secretary Shelby Cotton Mills, Shelby, N. C., wants prices on ice plant.

Knitting Mill.—Justin C. Jackson, Wilsonville, Ala., wants bids on a \$7000 hosiery mill, including 15-horse-power gasoline engine.

Lumber.—Algier & Smith, Anniston, Ala., want to correspond with makers of and dealers in white pine, pine and poplar, dressed on both sides, five-eighths thick by 6 to 10 wide.

Machine Shop.—See "Foundry."

Match Machinery.—O. W. Kerner, Winston, N. C., wants outfit for manufacturing matches.

Mining Equipment.—Brazos Valley Coal, Clay & Manufacturing Co., L. T. Fuller, superintendent, Calvert, Texas, is in the market for complete coal-mining equipment, including two 100-horse-power boilers, double-cylinder hoisting engine; drum, etc., screens for tipple, cages for double shaft, platforms, two boiler-feed pumps, mine ventilating fan, one-half mile 16-pound steel rails and other machinery and supplies.

Oil-mill Machinery.—Florence Oil Mill, Florence, S. C., wants small second-hand filter press for filtering daily output of 40-ton oil mill; also two second-hand sides of 30-inch well huller.

Paper.—Wm. J. Dunlap, Tallapoosa, Ga., wants samples and prices on rough brown paper suitable for making tubes or cones for cotton mills; wants prices by the ton in rolls.

Paper-box Machinery and Supplies.—Raleigh (N. C.) Hosiery Co. wants to correspond with manufacturers of paper-box machinery and supplies.

Peanut Roasters.—L. J. Turner, Grover, N. C., wants prices on peanut roasters.

Pig Brass.—J. B. D. Forbes, Shiloh, N. C., wants addresses of manufacturers of pig brass.

Planing Mill.—J. L. Lovvorn, Bowden, Ga., will buy planing-mill outfit.

Planing-mill Machinery.—Morris & Greever, Chilhowie, Va., want to buy a second-hand planer.

Railway Equipment.—See "Mining Equipment."

Railway Equipment.—Tennessee & North Carolina Railroad, J. J. Holloway, Wheeling, W. Va., president, will need rails, rolling stock and bridges for twenty-five miles of road.

Railway Equipment.—Owensboro Coal & Mineral Co., H. A. Williams, president, Owensboro, Ky., will probably want two to three miles of second-hand steel rails from twenty to forty pounds.

Railway Equipment.—Grant & Williams, Park Row Building, New York, want 18x24 locomotive, saddle tank, weight fifty tons, two driving wheels on each side, rigid wheel base nine feet or less.

Saw-mill.—June Bros., Hammond, La., is in the market for seven-foot band mill.

Saw-mill.—D. J. McMillan & Co., South Washington, N. C., want 100-horse-power boiler and circular saw mill complete.

Sewer-pipe Machinery.—Eureka Brick and Tile Works, Durham, N. C., is in the market for a plant to make sewer pipe.

Sewer-pipe Machinery.—Bartow Brick & Tile Co., W. R. Satterfield, president, Cartersville, Ga., will soon be in the market for sewer-pipe machinery.

Soda-water Plant.—See "Bottling Machinery."

Structural Steel.—Ward Baldwin, Mitchell Building, Cincinnati, Ohio, will open proposals February 11 for steel structure and foundry building complete; specifications sent on application.

Telephone Equipment.—Geo. H. Robinson & Sons, Laurel Blooming, Tenn., want materials and equipment for construction of five miles of telephone; want about eight 'phones.

Tower.—E. W. Van C. Lucas, Wilmington, N. C., will open bids February 28 for erecting observation tower at Fort Caswell; information on application.

Water-works.—See "Electric-light Plant."

Water-works.—Barbour Hardware Co., Philippi, W. Va., wants estimates on construction of system of water-works; hydraulic system preferred.

Water-works.—Bids will be opened February 15 for construction of water-works at Woodstock, Va., in accordance with plans

and specifications on file. Usual rights reserved. Specifications and information can be had of Chas. S. York, engineer, 1526 W. Biddle street, Baltimore, Md.

Woodworking Machinery.—S. M. Smith & Sons, Pikeville, Tenn., are in the market for rip saw and table.

Woodworking Machinery.—Randall Bros., Newberry, Mich., are in the market for machinery, including an edger and lumber trimmer.

Woodworking Machinery.—D. J. McMillan & Co., South Washington, N. C., want crate, basket, veneering and general woodworking machinery.

Woodworking Machinery.—Neal Folding Coop Co., R. P. Rittenhouse, president, Lewistown, W. Va., wants to buy engine and boiler, resaw and double surfacer.

Woodworking Machinery.—Pledger & Vonder Lieth, Athens, Ga., want quotations on second-hand planer and matcher eighteen inches, twenty inches or twenty-four inches, six-inch molder, tenoner, mortiser and borer, single-spindle friter, panel raiser, door and blind clamp, scroll saw, band saw, resaw, etc.

TRADE LITERATURE.

Locomotive Sanders.—A word or two about locomotive sanders is of special interest to managers of steam railways and other equipments where sanders are utilized. Formerly the matter of sanding received but scant attention, and any gravity system which would deliver sand somewhere on the rail seemed to be equal to all needs, but as time showed these devices were not satisfactory, improvements have been devised by manufacturers. The American Locomotive Sander Co., Thirteenth and Willow streets, Philadelphia, has long been a prominent manufacturer of this character of equipment, and its new illustrated catalogue is of especial interest. Its sander is of especial character, and has proven of exceptional value.

For Plumbing and Water Works.—The specialties demanded in the construction and maintenance of plumbing and water works are very numerous. The production of these specialties is an art which has received the attention of inventors and manufacturers of note in the industrial world. The output increases largely each year, and improvements are continually being placed on the market by progressive makers. Of these latter is the Pleuger & Henger Manufacturing Co. of St. Louis, Mo., a leading manufacturer in this branch of metal-working. Its plumbing and water-works specialties are known with great favor in all portions of the country. The 1901 catalogue of these specialties, bound in cloth, is ready for contractors, plumbers and others having real use for it.

Flexible Metallic Tubing.—Progressive mechanics are constantly becoming better acquainted with the merits of flexible metallic tubing as a reliable and practically indestructible substitute for rubber hose. The new tubing is constructed in such a manner and of such material as enables it to be employed for the transmission of heat, steam, petroleum, oils, benzoin, lyes, air, gas, water, etc. This tubing will not char, kink or crush, and will stand all pressures. It is made from hardened bronze galvanized steel tapes. Messrs. Albanus L. Smith & Co., 1305 Arch street, Philadelphia, have issued an interesting illustrated pamphlet in reference to this tubing. They are agents, importers and dealers, and handle the product of the United Flexible Metallic Tubing Co., Limited, of England.

For Every Flour Miller.—Every flour miller should examine the new publication "Wolfprints," now being distributed. Valuable information regarding flour milling can be gleaned from its pages, as well as amusement from the humorous vein in which the contents abound. "Wolfprints" deals especially with the Gyrator, which for practical money-making milling is guaranteed by its builder to be superior to other sifters. Thousands of successful millers attest to this superiority. "Wolfprints" is tastefully arranged and printed, and its title page shows the editor (Brother Wolf) in his editorial sanctum, wherein are to be seen the usual accessories of the up-to-date molder of public opinion, such as paste-pot and shears, blue pencil and other equipment. If you are a miller do not fail to ask the Wolfprints Company, Chambersburg, Pa., to send you a copy of this little trade journal.

Modern Refrigerators.—The value of refrigerators, whether for residence or general purposes, depends largely on their hygienic

value. The manufacture of refrigerators has, in common with other products, kept pace with the progress of the times, and equipments of this character are now offered combining the desirable requisites that exacting users demand. The McCray Refrigerator & Cold Storage Co. of Kendallville, Ind., has had a varied experience in constructing refrigerators from the smallest to the largest, and its success is attested by thousands of buyers throughout the United States and foreign countries. This company's catalogue No. 36 describes, with illustrations, its make of odorless wood and tiled refrigerators, and is of interest to all prospective purchasers, whether for private houses or for extensive plants in groceries, packing-houses, hotels and other public institutions.

Ice-Making and Refrigeration.—An important class of machinery is that which includes equipments for the manufacture of ice and for refrigerating purposes. The design and construction of such apparatus has made great strides during recent years, and the plants now offered are of the most practical type possible. In breweries, packeries, storage-houses and other plants where it is desirous to maintain a temperature below that of the atmosphere, or to make ice for any purpose, the ice or refrigerating machine finds its place. The York (Pa.) Manufacturing Co. is one of the most successful of manufacturers in this branch of machinery, and its equipments have been installed in some of the most important industrial establishments, both large and small, in this and in foreign countries. Its latest catalogue is most comprehensive in its treatment of the York machines, and is handsomely illustrated by photographic reproductions. The company contracts for plants complete, building everything used, its product including ammonia fittings, apparatus and other machines.

A Modern Refrigerator.—A refrigerator is a household necessity, and its purchase entails upon the buyer the selection of that one which meets the requirements of economy and hygiene. To preserve perishable food fresh and uncontaminated is essential to health not only in summer, but during the winter as well. Modern methods of constructing refrigerators, both for household and general service, have solved the annoying questions of former years, and one is now enabled to obtain a refrigerator that will cause the retention of the sweetness and freshness of meats, fish, poultry, vegetables and other foods without contamination by any kind of odor. The Keyser Manufacturing Co. of Chattanooga, Tenn., has been especially successful in meeting the demand for a perfect refrigerator as outlined above, its product being known extensively as the Odorless Refrigerator. This is a scientific preserver of food, and thousands of people have attested their satisfaction as to its merits. The company's 1901 catalogue is of interest to those who may desire to know the particulars of its refrigerators.

Expanded Metal Fireproof Construction.—Contractors engaged in the construction of buildings of any character whatever will be interested to know that an illustrated booklet has been issued concerning certain phases and the use of expanded metal. This booklet is confined to the subject of fireproof floors, and scarcely touches upon the wide field of expanded metal laths for the interior and exterior construction of buildings. The theoretical and practical side of steel and concrete construction is given considerable space in the publication, and architects and engineers are invited to avail themselves of this valuable information. Novel or difficult conditions in any kind of structure especially are solved by the use of this new modern material. Merritt & Co., Incorporated, 1624 Ridge avenue, Philadelphia (Philadelphia branch of the Expanded Metal Companies), have issued the booklet referred to. Merritt & Co. are engineers and contractors for architectural iron work and the fireproofing of buildings of every kind. This firm makes a special feature of expanded metal lockers, and has issued a booklet concerning its product in this direction.

Molding Machines.—Improved molding machines for use in foundries meet a want that will attract many manufacturers. A more widespread use of such machines in foundries and a cheapening of both machine and pattern expense is designed in the introduction of the Split Pattern Molding Machine—power, hand, fixed or portable. This machine is to be operated by power for ramming where circumstances allow, and where sizes of flasks and situations do not warrant this, to mechanically draw the patterns only, the remaining being done by hand. A pamphlet

in reference to this machine has been issued, and it will interest especially those founders who have not had experience with stripping plates. The Vibrator Frame Molding Machine is another improved apparatus that is destined to meet with a large demand. This machine makes available solid and gated patterns already in use, without change, uses, if desired, the same matches and flasks which have always been employed, but runs the molds by power and draws the patterns with a machine guide from both cope and drag. Further details can be obtained by addressing the Tabor Manufacturing Co., Elizabeth, N. J., which builds the machines mentioned.

Compressed-Air Industry.—The rapid and extended development of the compressed-air field has established a demand for air-compressing machinery of the highest efficiency and economy. This demand is increasing continually, and manufacturers of this class of equipment include some noted establishments. A publication just issued on this subject includes full information relative to the transmission of compressed air and capacity lost by air compressors in operation at various altitudes, together with other interesting and valuable facts. The Clayton Air Compressor Works, 26 Cortlandt street, New York, have the publication ready for distribution, it being their No. 11 catalogue. This company bases its claims for superiority upon the fundamental points of a good air compressor, such as simplicity of design, economy in consumption of power, efficiency in air compression, accessibility and durability of working parts and perfect automatic regulation. The product is offered as described based upon a world-wide reputation of the highest character, gained through thirty years of successful manufacture exclusively devoted to air-compressing machinery. The Clayton line includes compressors, receivers, vacuum pumps, carbonic-acid gas and high-pressure compressors and air-lift pumping system.

Automatic Draft Regulation.—The desirability of maintaining an equal draft in the operation of house-heating apparatus or of boilers is readily acknowledged. Users of the equipment mentioned do not ordinarily attain this draft, and it is for their information that reference is made here to the subject. To insure in the fire-box a perfectly equal draft under nearly all conditions will serve both comfort and economy to a most gratifying extent. This equality can be produced by the use of the Flower Draft Regulator, of which Joseph Battles, 50 Island street, Lawrence, Mass., is sole agent. The device is a distinct and radical departure from ordinary methods of draft regulation. Its automatic feature is governed by natural forces, and it is practically a watchman both by day and night. It reduces clinkers to a minimum, prevents overheating and escape of gas, retains the heat, and, generally speaking, perfects the heating apparatus to an extent not realized by those not conversant with this regulator's efficiencies. A large number of users who have written the agent strong recommendations of the device attest to its performing faithfully and completely the services for which it is offered. In summer it will act as a ventilator and keep the air of the cellar dry and fresh. An interesting booklet anent the Fowler is issued by the agent. Send for copy.

Treatise on Heating.—If all manufacturers issued catalogues as inviting in appearance, as readable in contents as the new catalogue on the "Webster System of Steam Circulation" for heating purposes, just published by Warren Webster & Co., Camden, N. J., there would be less complaint on the part of catalogue users that the wastebasket is the beginning and end of a customer's interest in such literature. This catalogue is a handsome piece of bookmaking, with artistic cover page in green and gold and a neutral tint, the inside printed on fine antique stock in two colors, with all the illustrations in genuine photogravure. The contents, descriptive of the "Webster System," as it is known everywhere, is written in a clear, clean, forcible style, with very little technicalities, and reads as easily and as entertaining as the talk of a clever salesman. Persons wonder sometimes at the catalogues of advertisers, why it is that in general catalogues are so bald and stilted. Surely the logical way to look at the catalogue question is to say that it is a silent salesman. Well-dressed, informing, an easy-to-read and easy-to-remember talker—such is a good catalogue, and for these and other reasons that will appear readily to the man who reads the book this Webster catalogue is a good piece of advertising. Every engineer or architect should have one, for it contains something new and strong on the heating problem.

apeake & Ohio Railway Co. is considering the construction of tracks for a yard at Glasgow, and that it may make several improvements to its line in the vicinity of this town. F. I. Cabell at Richmond is engineer.

Hollins, Ala.—The Hollins, Heflin & Sylacauga Railway Co. is constructing an extension about eight miles in length. The road is now in operation a distance of twenty-eight miles. J. A. Kaul at Hollins is president of the company.

Jefferson, N. C.—The New River Development Co., it is reported, has been organized to build a railroad through a portion of Ashe county to connect with the Norfolk & Western system. C. S. Churchill at Roanoke is engineer of the Norfolk & Western.

Jefferson, N. C.—It is reported that the proposed road through Ashe county, North Carolina, may be built by the Norfolk & Western, which has applied for a franchise to extend its line through Carroll and Grayson counties in Virginia. The extension in North Carolina, it is stated, will be through portions of Ashe, Alleghany and Watauga counties. C. S. Churchill at Roanoke, Va., is engineer.

Kansas City, Mo.—It is reported that the Kansas City, Fort Scott & Memphis Railroad Co. has let a contract for the construction of a branch about eight miles long near Joplin, Mo. D. Bontecou of Kansas City is chief engineer.

Kansas City, Mo.—It is reported that Messrs. Denison, Prior & Co., bankers of Cleveland, Ohio, are interested in the scheme to build an electric railroad between Kansas City and St. Joseph by way of Parkville. The estimated length of the road is fifty miles. J. M. Brown & Co. of Kansas City are said to represent the promoters.

Knoxville, Tenn.—Surveys have been completed for the proposed railroad to be built by the East Tennessee Iron & Coal Co. W. C. Crozer of Knoxville is engineer.

Lake Charles, La.—It is reported that the Gulf, Colorado & Santa Fe Railroad Co. is interested in the Lake Charles & Rice Belt Railroad, recently referred to in the Manufacturers' Record, and that a line will be built from Marshall, Texas, to Lake Charles, a distance of 150 miles, to connect with it. A. B. Eastman is general manager of the Rice Belt Railroad. L. J. Polk at Galveston is general manager of the Santa Fe.

Loudon, Tenn.—The Southern Railway Co., it is announced, has decided to survey a road between Loudon and Clinton, with the view of shortening the distance between its main line and the Knoxville & Ohio division. W. H. Wells at Washington is engineer.

Louisville, Ky.—The Louisville, Henderson & St. Louis Railroad Co. has under consideration an extension through a portion of Hancock county to reach coal deposits in that locality. The branch, if built, will connect with the main line near Havesville. Attila Cox at Louisville is president of the company.

Louisville, Ky.—It is reported that the Ohio parties interested in the electric line between Louisville and La Grange, Ky., through the Pewee valley, include David Morrison and C. L. Morely of Cleveland, who are represented by A. L. Smartt, also of Cleveland. It is stated that a construction company has already been formed and the necessary rails purchased for the road.

Lufkin, Texas.—E. A. Frost, general manager of the Texas & Louisiana Railway Co., writes that it is expected to build an extension of about eight miles during the present year.

Marion, S. C.—It is announced that the Carolina Northern Railroad Co. has given a contract to the Carolina Construction Co. to grade the extension between Barnesville, N. C. and Marion, S. C. The distance is twenty-eight miles. J. C. Ross of Lumberton, N. C., is general manager of the construction company.

Mayo, Fla.—The Suwannee & San Pedro Railroad Co., it is announced, has decided to extend its road to Mayo and Perry, a distance of twenty-five miles. R. P. Daniel at Jacksonville is president of the company.

Nashville, Tenn.—Noel & Thompson of Chattanooga, it is reported, have secured a contract to build thirty-five miles of extension of the Tennessee Central Railroad between Nashville and Clarksville. Jere Baxter at Nashville is president of the railroad company.

New Orleans, La.—Bids will be received until February 1 for grading about three miles of track at the works of the Myles Salt Co. J. N. Hazlehurst, 606 Commercial Place, may be addressed.

Newport, Ark.—Right of way is being secured in the interest of a railroad between Newport and Rush, Ark., a distance of

eighty-five miles. It is stated that Kansas City capitalists are interested in the project.

Newport, Tenn.—A correspondent of the Manufacturers' Record writes that work on the right of way of the Tennessee & North Carolina Railroad has commenced, and that it is expected to build about twenty miles between now and September 1. The company will probably be in the market for relaying rails as well as bridges and rolling stock. The railroad will extend through a portion of Haywood, N. C., to Waynesville. J. J. Holloway at Wheeling, W. Va., is reported as president of the company.

Newport News, Va.—The Norfolk & Northern Neck Railroad Co. has asked for legislative authority to build a road from Newport News to a point in Rockingham county. Among those interested are Isaac A. Hopper and Charles D. Woodhall.

New Roads, La.—B. S. Wathen, chief engineer of the Texas & Pacific Railway Co., writes the Manufacturers' Record that the company proposes building an extension of its New Roads branch to a point near the mouth of the Red river during the present year, and will probably ask for a permit to bridge the Red river.

Norfolk, Va.—It is reported that the Chesapeake Transit Co. has contracted with Isaac A. Walker & Son of Philadelphia to build its line from Norfolk to Cape Henry. The estimated length of the road is twenty miles. The president of the company is Abram C. Mott of Philadelphia, and the vice-president, J. E. Cole of Norfolk.

Norfolk, Va.—The Norfolk & Bay Shore Railroad Co. has asked for legislative authority to construct a railroad.

Norfolk, Va.—The Norfolk & Lynnhaven Railroad & Terminal Co., it is reported, is making arrangements to build its line, which is to extend from Norfolk to Lynnhaven Bay, a distance of about eight miles. Among those interested are R. H. Osborne and William Lamb.

Orange, Texas.—J. A. Holland informs the Manufacturers' Record that the Orange & Northwestern Railroad Co. proposes building about thirty miles of line, but may extend the road later on. The first portion is to be built immediately, and surveys are now being made. G. Bedell Moore is president, and Alexander Gilmer, vice-president, of the company, which is capitalized at \$300,000.

Pine Bluff, Ark.—The proposed extension of the Pine Bluff & Arkansas River Railroad will be about ten miles in length. G. L. Morris at Pine Bluff is general manager of the company.

Porter, W. Va.—It is reported that the Porter's Creek & Gauley Railroad will be extended a distance of about fourteen miles during the present year. It is now in operation a distance of twenty-three miles. Peter Carroll at Charleston, W. Va., is general manager.

Richmond, Va.—Rails have been received for a portion of the electric railroad between Richmond and Petersburg, and it is announced that the Cleveland Construction Co., the general contractor, has sublet the work to James F. Bradley of Richmond.

Roanoke, Va.—E. L. Stone and J. B. Fishburn are members of the committee appointed to consider the plan to build an electric railroad between Roanoke and Fincastle, referred to in the last issue of the Manufacturers' Record.

Ruston, La.—The Arkansas Southern Railroad Co., it is stated, has decided to complete the extension now under construction to Sabine Pass. The company has recently elected J. W. Brown, president, and C. E. Neeley, vice-president. The mileage in operation extends from Eldorado, Ark., to Cedar, a distance of 107 miles. The proposed extension will be built from Cedar south.

Shreveport, La.—Officials of the Texas & Pacific Railroad Co. have recently made an inspection of a route between Shreveport and Natchitoches, through a portion of the Red river valley. It is understood that the company is considering an extension between the towns, an estimated distance of seventy-five miles. L. S. Thorne at Dallas, Texas, is vice-president of the company.

Sparta, Ga.—The East & West Railroad Co. has been formed to build between Sparta and Sandersville, a distance of thirty miles. Among those interested are R. M. Mitchell of Atlanta and S. Reese of Sparta.

Versailles, Ky.—The Louisville & Atlantic Railroad Co. is building an extension twenty-seven miles in length to complete the line, as originally intended, to Beattyville, Ky. J. P. Amaden at Versailles is president of the company.

Washington, D. C.—Joseph S. Millier of Washington, it is announced, is president of the Great Falls & Old Dominion Railroad

Co., which has begun the construction of its electric line from Rosslyn, Va., to the Potomac river, a distance of fourteen miles.

Waycross, Ga.—The Waycross Air Line Railway Co. has completed its extension to Fitzgerald, a distance of thirty miles, making the entire length of the road seventy miles. The company is considering an extension beyond Waycross. George D. Wadley at Waycross is general manager of the company.

Wichita Falls, Texas.—It is reported that Drexel & Co. of Philadelphia are interested in a proposed railroad from Wichita Falls to Greenville, Miss., passing through a section of Arkansas. At Greenville connection would be made with the Southern system.

Street Railways.

Beaumont, Texas.—M. A. Orlopp, one of the directors of the Beaumont Street Railway Co., states that it is expected to begin building this line in the near future.

Bowling Green, Ky.—It is stated that the town authorities have decided to sell a franchise for the right of way for a street railway. M. H. Crump may be addressed.

Chattanooga, Tenn.—The Chattanooga Electric Railway Co. has purchased 300 tons of rails for the construction of its proposed extensions in the suburbs.

Natchez, Miss.—The board of aldermen have granted a 50-year franchise to the Natchez Street Railway & Power Co., and it is reported that work is to begin upon the line within sixty days.

Norfolk, Va.—The Norfolk, Portsmouth & Berkley Terminal Co. has been organized, it is reported, to build a tunnel between the cities mentioned, and may construct a railroad line.

Wheeling, W. Va.—The Wheeling & Cadiz Electric Railway Co. has asked for a franchise to build its electric line on several of the city streets. The matter is now under consideration.

Machinery, Proposals and Supplies Wanted

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Baling Presses.—Atlanta Metal & Bottle Co., Atlanta, Ga., is in the market for baling presses.

Beacons.—Sealed proposals will be received until February 19 at office of lighthouse engineer, Mobile, Ala., for furnishing all materials and labor necessary for erection of two lighted beacons at East Pass, Fla., in accordance with specifications, copies of which, with blank proposals and other information, may be had from Lieut.-Col. A. N. Damrell, corps of engineers, United States Army.

Boat Construction.—C. H. McKinstry, captain, United States engineer office, St. Augustine, Fla., will receive proposals until March 7 for building and equipping a steel hull, stern wheel, combined dredge and snagboat. Information on application.

Bont Construction.—F. J. Higginson, rear-admiral, United States Navy, chairman, office lighthouse board, Washington, D. C., will receive proposals until March 2 for furnishing materials and labor for construction of twin-screw steel steam lighthouse tender Larkspur, in accordance with specifications, copies of which, with blank proposals and information, may be had upon application to above office or office of lighthouse inspector, Tompkinsville, N. Y.

Boiler.—See "Saw-mill."

Boiler.—June Bros., Hammond, La., are in the market for 100-horse-power boiler, new or second-hand.

Boiler and Engine.—See "Woodworking Machinery."

Boiler and Engine.—W. G. Egerton, Macon, N. C., will buy 25-horse-power engine and 30-horse-power boiler.

Bollers.—E. P. B., care Manufacturers' Record, wants second-hand 80 to 100-horse-power bollers, with large tubes, firebox preferred, 100 pounds steam pressure, Hartford inspection.

Bollers, Engines, etc.—Galloway Coal Co., R. Galloway, president, Memphis, Tenn., expects to purchase a large hoisting engine, bollers, etc.

Bottling Machinery.—W. H. Underwood, Montezuma, Ga., wants prices on machinery for soda-water plant.

Box Manufacturers.—L. J. Turner, Grover, N. C., wants prices on folding pasteboard boxes, unprinted.

Brick Machinery.—See "Sewer-pipe Machinery."

Brick Machinery.—See "Sewer-pipe Machinery."

Building Material and Equipment.—A. E. Hilderbrand, Box 136, Red Lion, Pa., wants bids and circulars from building-material manufacturers.

Building Materials.—J. W. Tallafiero, 122 Thirty-fifth street, Newport News, Va., wants prices on building materials, including iron and corrugated beams, glass, lime, plaster, cement, brick, stone, etc.

Canning Machinery.—J. T. Nicholson, M.D., Bath, N. C., is in need of canning machinery.

Canning Machinery.—D. J. McMillan & Co., South Washington, N. C., want canning machinery, cans, boxes, etc.

Dye Plant.—Griffin Knitting Mills, E. H. Spivy, secretary, Griffin, Ga., wants estimates on dye plant complete for cotton ribbed underwear mill of 100 dozen per day capacity.

Dynamo.—See "Engine."

Electrical Machinery.—See "Foundry."

Electrical Machinery.—Geo. H. Robinson & Sons, Laurel Blooming, Tenn., will want an electric dynamo of fifty lights of 16 candle-power each.

Electric-light Plant.—C. B. Hendrix, Sandersville, Ga., wants to correspond with electric-light companies.

Electric-light Plant.—Board of aldermen, Lake Providence, La., will open proposals February 20 for the construction of water-works and electric-light plant, after specifications, of which copies may be obtained on application to G. M. Franklin, mayor. Machinery will include two 350,000-gallon pumps, air compressor and accumulator, high-speed engine and 30-kilowatt generator, two 40-horse-power bollers, etc.

Elevators.—High Point (N. C.) Upholstering Co. is in the market for one belt-power elevator and one hand-power elevator.

Elevators.—Atlanta Metal & Bottle Co., Atlanta, Ga., is in the market for elevators.

Engine.—See "Knitting Mill."

Engine.—Williams Bros. Slate Co., Snowden, Va., wants hoisting engine, second-hand.

Engine.—Peacock's Iron Works, Selma, Ala., wants prices (dealers') on small six-horse-power high-speed engine for driving a dynamo.

Engine.—Roanoke Coal Supply Co., F. P. Filippo, secretary, Roanoke, Va., is in need of a five or six-horse-power engine, dynamo or gasoline engine, new or second-hand, for sawing cordwood.

Engines.—See "Foundry."

Engines.—L. E. Kennedy & Co., 61 Broadway, New York city, wants 22,000-horse-power second-hand Corliss tandem duplex or compound engines, units 2000 upwards, for cash.

Fire Protection.—See "Foundry."

Flour Mill.—C. C. Cox, Jonesboro, Tenn., wants complete outfit for roller flour mill.

Founders.—J. H. Thacker, Oswego, S. C., has invented a thill coupling, and wants to have same manufactured.

Foundry.—Dodge Manufacturing Co., Mishawaka, Ind., is considering bids for construction and equipment of foundry and machine shop, to include two buildings, 200x125 feet each, steel construction, gravel roof, brick walls; also two 35-ton traveling cranes, heating and sprinkler equipment, two-inch cupola, 150-kilowatt generator and engine, 28x48 Corliss engine.

Foundry Equipment.—Ocala Foundry and Machine Works, Ocala, Fla., is in the market for a second-hand 72-inch boring mill and a wet emery wheel tool grinder.

Foundry Machinery.—Union Iron Works Co., Selma, Ala., is in the market for a light car-wheel borer, with universal chuck, to take wheels up to twenty-six inches in diameter, new or second-hand.

Furniture Manufacturers.—J. G. White, Grover, N. C., wants catalogues and prices from furniture, carpet and wallpaper manufacturers and dealers.

Gasoline Engine.—See "Engine."

Gasoline Engine.—See "Knitting Mill."

Harness.—W. W. King, Charlottesville, Va., wants catalogues and prices of heavy wagon harness.

Heating Apparatus.—Harry E. Chapman, Chattanooga, Tenn., will want to purchase heating apparatus.

Heating Equipment.—See "Foundry."

Hoisting Engine.—See "Engine."

Hoisting Engine.—See "Boilers, Engines, etc."

Ice Plant.—J. H. Hull, secretary Shelby Cotton Mills, Shelby, N. C., wants prices on ice plant.

Knitting Mill.—Justin C. Jackson, Wilsonville, Ala., wants bids on a \$7000 hosiery mill, including 15-horse-power gasoline engine.

Lumber.—Algier & Smith, Anniston, Ala., want to correspond with makers of and dealers in white pine, pine and poplar, dressed on both sides, five-eighths thick by 6 to 10 wide.

Machine Shop.—See "Foundry."

Match Machinery.—O. W. Kerner, Winston, N. C., wants outfit for manufacturing matches.

Mining Equipment.—Brazeos Valley Coal, Clay & Manufacturing Co., L. T. Fuller, superintendent, Calvert, Texas, is in the market for complete coal-mining equipment, including two 100-horse-power boilers, double-cylinder hoisting engine, drum, etc., screens for tipples, cages for double shaft, platforms, two boiler-feed pumps, mine ventilating fan, one-half mile 16-pound steel rails and other machinery and supplies.

Oil-mill Machinery.—Florence Oil Mill, Florence, S. C., wants small second-hand filter press for filtering daily output of 40-ton oil mill; also two second-hand sides of 30-inch well huller.

Paper.—Wm. J. Dunlap, Tallapoosa, Ga., wants samples and prices on rough brown paper suitable for making tubes or cones for cotton mills; wants prices by the ton in rolls.

Paper-box Machinery and Supplies.—Raleigh (N. C.) Hosiery Co. wants to correspond with manufacturers of paper-box machinery and supplies.

Peanut Roasters.—L. J. Turner, Grover, N. C., wants prices on peanut roasters.

Pig Brass.—J. B. D. Forbes, Shiloh, N. C., wants addresses of manufacturers of pig brass.

Planing Mill.—J. L. Lovvorn, Bowden, Ga., will buy planing-mill outfit.

Planing-mill Machinery.—Morris & Greever, Chilhowie, Va., want to buy a second-hand planer.

Railway Equipment.—See "Mining Equipment."

Railway Equipment.—Tennessee & North Carolina Railroad, J. J. Holloway, Wheeling, W. Va., president, will need rails, rolling stock and bridges for twenty-five miles of road.

Railway Equipment.—Owensboro Coal & Mineral Co., H. A. Williams, president, Owensboro, Ky., will probably want two to three miles of second-hand steel rails from twenty to forty pounds.

Railway Equipment.—Grant & Williams, Park Row Building, New York, want 18x24 locomotive, saddle tank, weight fifty tons, two driving wheels on each side, rigid wheel base nine feet or less.

Saw-mill.—June Bros., Hammond, La., is in the market for seven-foot band mill.

Saw-mill.—D. J. McMillan & Co., South Washington, N. C., want 100-horse-power boiler and circular saw mill complete.

Sewer-pipe Machinery.—Eureka Brick and Tile Works, Durham, N. C., is in the market for a plant to make sewer pipe.

Sewer-pipe Machinery.—Bartow Brick & Tile Co., W. R. Satterfield, president, Cartersville, Ga., will soon be in the market for sewer-pipe machinery.

Soda-water Plant.—See "Bottling Machinery."

Structural Steel.—Ward Baldwin, Mitchell Building, Cincinnati, Ohio, will open proposals February 11 for steel structure and foundry building complete; specifications sent on application.

Telephone Equipment.—Geo. H. Robinson & Sons, Laurel Bloomery, Tenn., want materials and equipment for construction of five miles of telephone; want about eight 'phones.

Tower.—E. W. Van C. Lucas, Wilmington, N. C., will open bids February 28 for erecting observation tower at Fort Caswell; information on application.

Water-works.—See "Electric-light Plant."

Water-works.—Barbour Hardware Co., Philippi, W. Va., wants estimates on construction of system of water-works; hydraulic system preferred.

Water-works.—Bids will be opened February 15 for construction of water-works at Woodstock, Va., in accordance with plans

and specifications on file. Usual rights reserved. Specifications and information can be had of Chas. S. York, engineer, 1526 W. Biddle street, Baltimore, Md.

Woodworking Machinery.—S. M. Smith & Sons, Pikeville, Tenn., are in the market for rip saw and table.

Woodworking Machinery.—Randall Bros., Newberry, Mich., are in the market for machinery, including an edger and lumber trimmer.

Woodworking Machinery.—D. J. McMillan & Co., South Washington, N. C., want crate, basket, veneering and general woodworking machinery.

Woodworking Machinery.—Neal Folding Coop Co., R. P. Rittenhouse, president, Lewisburg, W. Va., wants to buy engine and boiler, resaw and double surfacer.

Woodworking Machinery.—Pledger & Vonder Lieth, Athens, Ga., want quotations on second-hand planer and matcher eighteen inches, twenty inches or twenty-four inches, six-inch molder, tenoner, mortiser and borer, single-spindle fliczer, panel raiser, door and blind clamp, scroll saw, band saw, resaw, etc.

TRADE LITERATURE.

Locomotive Sanders.—A word or two about locomotive sanders is of special interest to managers of steam railways and other equipments where sanders are utilized. Formerly the matter of sanding received but scant attention, and any gravity system which would deliver sand somewhere on the rail seemed to be equal to all needs, but as time showed these devices were not satisfactory, improvements have been devised by manufacturers. The American Locomotive Sander Co., Thirteenth and Willow streets, Philadelphia, has long been a prominent manufacturer of this character of equipment, and its new illustrated catalogue is of especial interest. Its sander is of especial character, and has proven of exceptional value.

For Plumbing and Water Works.—The specialties demanded in the construction and maintenance of plumbing and water works are very numerous. The production of these specialties is an art which has received the attention of inventors and manufacturers of note in the industrial world. The output increases largely each year, and improvements are continually being placed on the market by progressive makers. Of these latter is the Pleuger & Henger Manufacturing Co. of St. Louis, Mo., a leading manufacturer in this branch of metal-working. Its plumbing and water-works specialties are known with great favor in all portions of the country. The 1901 catalogue of these specialties, bound in cloth, is ready for contractors, plumbers and others having real use for it.

Flexible Metallic Tubing.—Progressive mechanics are constantly becoming better acquainted with the merits of flexible metallic tubing as a reliable and practically indestructible substitute for rubber hose. The new tubing is constructed in such a manner and of such material as enables it to be employed for the transmission of heat, steam, petroleum, oils, benzoin, lyes, air, gas, water, etc. This tubing will not char, kink or crush, and will stand all pressures. It is made from hardened bronze galvanized steel tapes. Messrs. Albanus L. Smith & Co., 1305 Arch street, Philadelphia, have issued an interesting illustrated pamphlet in reference to this tubing. They are agents, importers and dealers, and handle the product of the United Flexible Metallic Tubing Co., Limited, of England.

For Every Flour Miller.—Every flour miller should examine the new publication "Wolfprints," now being distributed. Valuable information regarding flour milling can be gleaned from its pages, as well as amusement from the humorous vein in which the contents abound. "Wolfprints" deals especially with the Gyrator, which for practical money-making milling is guaranteed by its builder to be superior to other sifters. Thousands of successful millers attest to this superiority. "Wolfprints" is tastefully arranged and printed, and its title page shows the editor (Brother Wolf) in his editorial sanctum, wherein are to be seen the usual accessories of the up-to-date molder of public opinion, such as paste-pot and shears, blue pencil and other equipment. If you are a miller do not fail to ask the Wolfprints Company, Chambersburg, Pa., to send you a copy of this little trade journal.

Modern Refrigerators.—The value of refrigerators, whether for residence or general purposes, depends largely on their hygienic

value. The manufacture of refrigerators has, in common with other products, kept pace with the progress of the times, and equipments of this character are now offered combining the desirable requisites that exacting users demand. The McCray Refrigerator & Cold Storage Co. of Kendallville, Ind., has had a varied experience in constructing refrigerators from the smallest to the largest, and its success is attested by thousands of buyers throughout the United States and foreign countries. This company's catalogue No. 35 describes, with illustrations, its make of odorless wood and tiled refrigerators, and is of interest to all prospective purchasers, whether for private houses or for extensive plants in groceries, packing-houses, hotels and other public institutions.

Ice-Making and Refrigeration.—An important class of machinery is that which includes equipments for the manufacture of ice and for refrigerating purposes. The design and construction of such apparatus has made great strides during recent years, and the plants now offered are of the most practical type possible. In breweries, packeries, storage-houses and other plants where it is desirable to maintain a temperature below that of the atmosphere, or to make ice for any purpose, the ice or refrigerating machine finds its place. The York (Pa.) Manufacturing Co. is one of the most successful of manufacturers in this branch of machinery, and its equipments have been installed in some of the most important industrial establishments, both large and small, in this and in foreign countries. Its latest catalogue is most comprehensive in its treatment of the York machines, and is handsomely illustrated by photographic reproductions. The company contracts for plants complete, building everything used, its product including ammonia fittings, apparatus and other machines.

A Modern Refrigerator.—A refrigerator is a household necessity, and its purchase entails upon the buyer the selection of that one which meets the requirements of economy and hygiene. To preserve perishable food fresh and uncontaminated is essential to health not only in summer, but during the winter as well. Modern methods of constructing refrigerators, both for household and general service, have solved the annoying questions of former years, and one is now enabled to obtain a refrigerator that will cause the retention of the sweetness and freshness of meats, fish, poultry, vegetables and other foods without contamination by any kind of odor. The Keyser Manufacturing Co. of Chattanooga, Tenn., has been especially successful in meeting the demand for a perfect refrigerator as outlined above, its product being known extensively as the Odorless Refrigerator. This is a scientific preserver of food, and thousands of people have attested their satisfaction as to its merits. The company's 1901 catalogue is of interest to those who may desire to know the particulars of its refrigerators.

Expanded Metal Fireproof Construction.—Contractors engaged in the construction of buildings of any character whatever will be interested to know that an illustrated booklet has been issued concerning certain phases and the use of expanded metal. This booklet is confined to the subject of fireproof floors, and scarcely touches upon the wide field of expanded metal laths for the interior and exterior construction of buildings. The theoretical and practical side of steel and concrete construction is given considerable space in the publication, and architects and engineers are invited to avail themselves of this valuable information. Novel or difficult conditions in any kind of structure especially are solved by the use of this new modern material. Merritt & Co., Incorporated, 1624 Ridge avenue, Philadelphia (Philadelphia branch of the Expanded Metal Companies), have issued the booklet referred to. Merritt & Co. are engineers and contractors for architectural iron work and the fireproofing of buildings of every kind. This firm makes a special feature of expanded metal lockers, and has issued a booklet concerning its product in this direction.

Molding Machines.—Improved molding machines for use in foundries meet a want that will attract many manufacturers. A more widespread use of such machines in foundries and a cheapening of both machine and pattern expense is designed in the introduction of the Split Pattern Molding Machine—power, hand, fixed or portable. This machine is to be operated by power for ramming where circumstances allow, and where sizes of flasks and situations do not warrant this, to mechanically draw the patterns only, the remaining being done by hand. A pamphlet

in reference to this machine has been issued, and it will interest especially those founders who have not had experience with stripping plates. The Vibrator Frame Molding Machine is another improved apparatus that is destined to meet with a large demand. This machine makes available solid and gated patterns already in use, without change, uses, if desired, the same matches and flasks which have always been employed, but rams the molds by power and draws the patterns with a machine guide from both cope and drag. Further details can be obtained by addressing the Tabor Manufacturing Co., Elizabeth, N. J., which builds the machines mentioned.

Compressed-Air Industry.—The rapid and extended development of the compressed-air field has established a demand for air-compressing machinery of the highest efficiency and economy. This demand is increasing continually, and manufacturers of this class of equipment include some noted establishments. A publication just issued on this subject includes full information relative to the transmission of compressed air and capacity lost by air compressors in operation at various altitudes, together with other interesting and valuable facts. The Clayton Air Compressor Works, 26 Cortlandt street, New York, have the publication ready for distribution, it being their No. 11 catalogue. This company bases its claims for superiority upon the fundamental points of a good air compressor, such as simplicity of design, economy in consumption of power, efficiency in air compression, accessibility and durability of working parts and perfect automatic regulation. The product is offered as described based upon a world-wide reputation of the highest character, gained through thirty years of successful manufacture exclusively devoted to air-compressing machinery. The Clayton line includes compressors, receivers, vacuum pumps, carbonic-acid gas and high-pressure compressors and air-lift pumping system.

Automatic Draft Regulation.—The desirability of maintaining an equal draft in the operation of house-heating apparatus or of boilers is readily acknowledged. Users of the equipment mentioned do not ordinarily attain this draft, and it is for their information that reference is made here to the subject. To insure in the fire-box a perfectly equal draft under nearly all conditions will serve both comfort and economy to a most gratifying extent. This equality can be produced by the use of the Fowler Draft Regulator, of which Joseph Battles, 50 Island street, Lawrence, Mass., is sole agent. The device is a distinct and radical departure from ordinary methods of draft regulation. Its automatic feature is governed by natural forces, and it is practically a watchman both by day and night. It reduces clinkers to a minimum, prevents overheating and escape of gas, retains the heat, and, generally speaking, perfects the heating apparatus to an extent not realized by those not conversant with this regulator's efficiencies. A large number of users who have written the agent strong recommendations of the device attest to its performing faithfully and completely the services for which it is offered. In summer it will act as a ventilator and keep the air of the cellar dry and fresh. An interesting booklet anent the Fowler is issued by the agent. Send for copy.

Treatise on Heating.—If all manufacturers issued catalogues as inviting in appearance, as readable in contents as the new catalogue on the "Webster System of Steam Circulation" for heating purposes, just published by Warren Webster & Co., Camden, N. J., there would be less complaint on the part of catalogue users that the wastebasket is the beginning and end of a customer's interest in such literature. This catalogue is a handsome piece of bookmaking, with artistic cover page in green and gold and a neutral tint, the inside printed on fine antique stock in two colors, with all the illustrations in genuine photogravure. The contents, descriptive of the "Webster System," as it is known everywhere, is written in a clear, clean, forcible style, with very little technicalities, and reads as easily and is as entertaining as the talk of a clever salesman. Persons wonder sometimes at the catalogues of advertisers, why it is that in general catalogues are so bald and stilted. Surely the logical way to look at the catalogue question is to say that it is a silent salesman. Well-dressed, informing, an easy-to-read and easy-to-remember talker—such is a good catalogue, and for these and other reasons that will appear readily to the man who reads the book this Webster catalogue is a good piece of advertising. Every engineer or architect should have one, for it contains something new and strong on the heating problem.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Richmond's Trade Expansion.

Messrs. Scott & Stringfellow of Richmond, Va., have prepared a statement of the expansion of the city's financial interests, which is very interesting. On January 1 the capital stock of the several banks represented \$5,543,000, an increase of nearly \$2,000,000 since March 1, 1898. The loans and discounts have increased within three years from \$12,144,000 to \$17,114,000, nearly \$5,000,000, while deposits have increased \$7,117,000, or 65 per cent. This is a significant indication of the growth of the city from a commercial and manufacturing standpoint as well.

New Corporations.

Arrangements are being made to open a bank at Parksley, Va., capitalized at \$25,000.

A. J. Bethune has been elected president of the Bank of Clinton, N. C., recently organized.

A charter has been issued to the Auburn Exchange Bank of Auburn, W. Va., with \$25,000 capital stock.

The business men of Gleason, Tenn., have decided to organize a bank in that town with \$25,000 capital stock.

L. M. Ware and others have formed the Jefferson Guaranty & Surety Co. of Lexington, Ky., capitalized at \$25,000.

W. C. O'Neal of Pensacola is interested in the national bank being organized at Geneva, Ala., with \$50,000 capital stock.

The Fayetteville (N. C.) National Bank, recently organized by W. J. Edwards, has opened for business with \$50,000 capital stock.

W. F. Hull and others are interested in the organization of the First National Bank at Cumby, Texas, with \$50,000 capital.

The National Savings Co. has recently been organized at San Antonio, Texas, capitalized at \$10,000, by R. A. Webster and others.

T. H. Morberry has been elected president, and W. H. Taylor, cashier, of the First National Bank organized at Archer City, Texas.

W. B. Gibson and W. P. Allen are interested in the national bank recently formed at Saline, Texas, with \$25,000 capital stock.

Arrangements are being made to open a bank at Spring Hill, Tenn., with \$10,000 capital stock. William Hughes is one of the promoters.

W. E. Borden has been elected president, and M. T. Brazenle, cashier, of the Bank of Mount Olive, recently organized at Mount Olive, N. C.

J. P. Mangum of Chesterfield, S. C., is interested in the Mutual Benevolent Association, recently organized in that town for insurance purposes.

The People's Bank has been commissioned to do business at Orangeburg, S. C., with \$30,000 capital stock. D. S. Herbert is one of the directors.

Another building and loan association has been formed at Columbia, S. C., with \$400,000 capital stock. F. H. Weston and John J. Earle are interested.

Among those interested in the Elgin National Bank, recently organized at Elgin, Texas, are Daniel Murphy of Taylor, Texas, and James A. Murphy of Elgin.

J. Van Lindley of Greensboro, N. C., and P. H. Hanes of Winston are interested in the Greensboro Security & An-

nality Co., formed for insurance purposes.

Mr. S. S. Broadus of Florence, Ala., has decided to open a bank at Stevenson, in the same State. This will make the seventh bank under his control in Alabama.

Arrangements are being made to open another savings bank at Nashville, Tenn., capitalized at \$25,000. Among those interested are George Tillman and J. N. Sperry.

J. W. Westcott of Charleston and W. S. Richardson of Summerville, S. C., have organized the Dorchester Bank at St. George's, in the same State, capitalized at \$25,000.

A bill has been introduced in the Virginia legislature authorizing J. S. Crawford and others to open a bank at Portsmouth, Va., to be entitled the Portsmouth Dime Savings Bank.

Arrangements are being made to organize the Scottsville National Bank at Scottsville, W. Va., with \$25,000 capital stock. Among those interested are D. H. Pitts and D. A. Langhorne.

The Montgomery National Bank, recently organized at Montgomery, W. Va., began business on January 4 with \$25,000 capital stock. S. H. Montgomery is president, and J. D. Foster, Jr., cashier.

The Lincoln Parish Bank is the title of the institution which has been organized at Ruston, La., capitalized at \$25,000. W. A. Lyman is president; W. A. Laurence, vice-president, and J. R. Smith, cashier.

New Securities.

The Bank of Manning, S. C., has decided to increase its capital stock to \$40,000.

The town of Port Gibson, Miss., has sold its issue of \$12,000 in bonds at a premium of \$862.

The Old Town Bank of Baltimore is considering the advisability of increasing its capital stock to \$300,000.

The town of Somerville, Tenn., is considering an issue of bonds for improvements. Address the town clerk.

The town of Collierville, Tenn., it is understood, is considering the issue of remaining bonds for improvements.

The town of Rocky Mount, N. C., will probably issue \$40,000 in bonds for improvements. Address the town clerk.

The town of Concord, N. C., will probably issue bonds if authorized by the legislature. The town clerk may be addressed.

The city of Spartanburg, S. C., will probably issue bonds if given legislative authority. The mayor may be addressed.

The town of Newburn, Tenn., may issue bonds for improvements if given authority by the State. The town clerk will give further information.

The issue of \$10,000 in 5 per cent. bonds of Dothan, Ala., has not been sold, and it is understood will be disposed of at private sale. H. A. Pearce is mayor.

The proposed issue of bonds of the city of Huntsville, Ala., amounts to \$40,000, and will be used for various purposes. The mayor may be addressed.

An election will be held March 15 at Shreveport, La., to decide on the question of issuing \$100,000 in bonds for improvements. Address the mayor.

An issue of \$14,000 in 4 per cent. bonds of Albany, Mo., has been registered by the State authorities. The town clerk may be addressed for further details.

The Southern Real Estate, Loan & Trust Co. of Charlotte, N. C., has decided to increase its capital stock from \$30,000 to \$50,000. P. M. Brown is president.

The Humboldt Cotton Mills Co. of Humboldt, Tenn., has decided to issue \$35,000 in bonds at 6 per cent. interest. H. C. Burnett is president of the company.

Hawkins county, Tennessee, may vote

on the question of issuing \$100,000 in bonds for road improvements. The county court may be addressed at Rogersville, Tenn.

There is a possibility that the school district of Goldsboro, N. C., will issue bonds if given the necessary authority. The school board may be addressed at Goldsboro.

Proposals will be received until February 11 by Red River county, Texas, for \$26,500 in 4 per cent. refunding bonds. F. M. Smith, county clerk, may be addressed at Clarksville, Texas.

The county court of Shelby county, Tennessee, is considering the issuing of \$150,000 in bonds for road improvements. J. P. Young is one of the committee in charge, and may be addressed at Memphis, Tenn.

The city of Macon, Ga., will vote February 19 on the proposal to issue \$70,000 in bonds for refunding purposes. The bond commission of the city will take the issue, and they will not be placed upon the market.

E. H. Rollins & Son of Boston have purchased the issue of \$50,000 in bonds recently offered for sale by the city of Memphis, Tenn., on an interest basis of 3½ per cent. Bids were received by investment firms from the principal financial centers of the country.

Financial Notes.

John H. Barr has been elected cashier of the First National Bank of Birmingham, Ala.

Thomas O. Smith has been elected cashier of the Birmingham Trust & Savings Co. of Birmingham, Ala.

The authorities of Cedartown, Ga., have made arrangements with Roby Robinson of Atlanta to refund an indebtedness of \$50,000 in bonds.

Arbitrator Given More Time.

The arbitrator in the matter of the sale of Thomas F. Ryan's holdings of Seaboard & Roanoke and Raleigh & Gaston stocks to the Williams-Middendorf syndicate, which controls the Seaboard Air Line, was to have given his decision not later than January 31, but he will not be able to do so, and has been granted until the latter part of February. The only question to be determined is the price to be paid to Mr. Ryan, all other details having been arranged. Both principals bind themselves to abide by the decision of the arbitrator, and Mr. Ryan further agrees to discontinue his suits against the Seaboard Air Line.—New York Commercial.

According to the report of Secretary S. A. Williams of the Commercial League of Fort Smith, Ark., \$320,000 were spent last year in new buildings and improvements, and the volume of business in the city exceeded \$16,000,000. There were paid in wages of industry \$211,000 per month, and of railroads \$33,000.

There are twelve ships, with aggregate tonnage of 112,475, now under construction at the yards of the Newport News Shipbuilding & Dry-Dock Co.

Hardware Specialties.—The "Green Book of Hardware Specialties" is issued in the effort to familiarize the trade with the many important and salable hardware specialties manufactured by the Smith & Hemenway Co., 296 Broadway, New York. This unique catalogue of fine tools will interest all dealers, and its edition in pocket size will enable them to readily refer to its pages when about to place orders. The catalogue is printed tastefully in green ink, which is not at all indicative of the company's knowledge of its business, for that extends back some years; rather does it hint at a streak of Celtic blood. The Smith & Hemenway Co. (and the Utica Drop Forge & Tool Co.) has disposed of its high-grade product to thousands of satisfied consumers and dealers.

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The Green Book Memorandum—Information Booklet is also issued by the company.

Cottonseed Crushing.—Success in cottonseed crushing is what every oil-mill owner aims to attain. The competition in the cottonseed industry increases as the industry becomes more firmly established, and consequently the small economies have to be looked to more carefully. Economical production means profit, and to secure this the services of an expert are necessary. Not necessarily that the expert should be attached to the mill regularly, because many small mills could not afford this, but to inspect at stated intervals and keep in modern condition the oil mills. John H. Crutchfield, 35 Hayden street, Atlanta, Ga., makes a specialty of acting as an adviser as indicated above. Many mills throughout the South attest to Mr. Crutchfield's value as an expert. Send to him for leaflet of interest.